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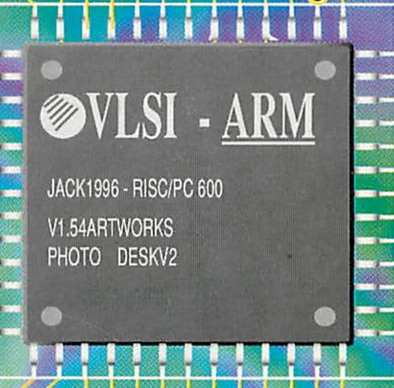
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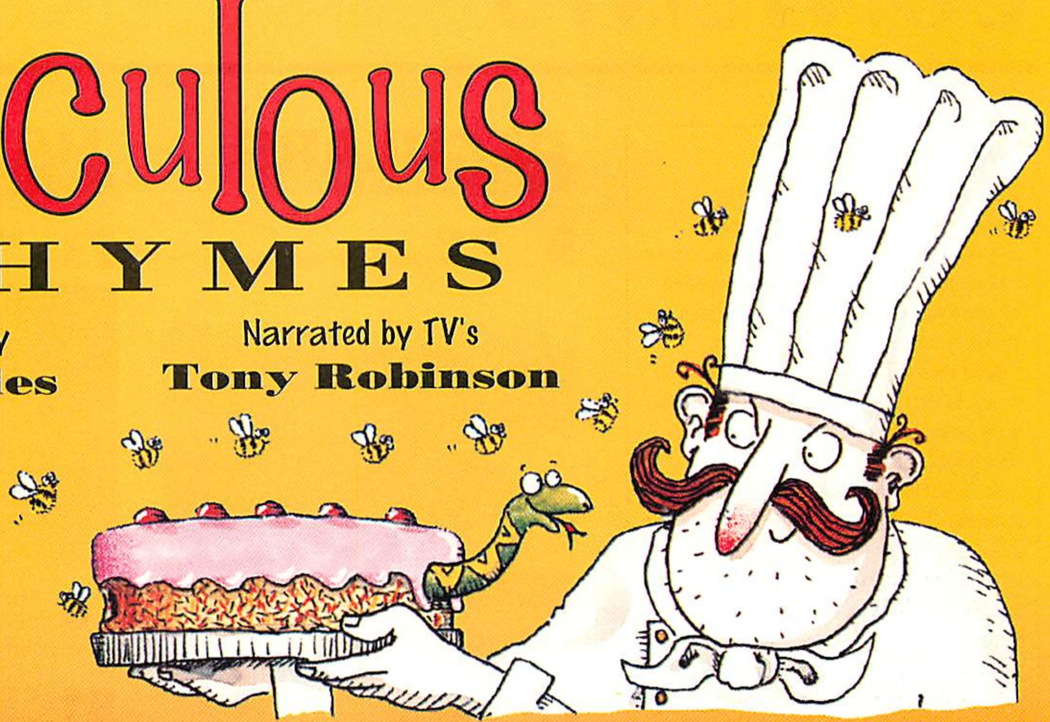
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Editor's letter

We've all just about recovered from the Wakefield show, and believe me it was *cooking*. Not just the temperature, which was a mite warm – though that was to be expected – but there was a buzz I don't think I've seen in the Acorn market for many a long year.

Most shows in recent years have been a bit clinical, lacking in enthusiasm, but this one was really great, it had atmosphere (hot and sticky – but good).

So I'd just like to thank the Wakefield Computer Club for putting on such an excellent show – to arrive at an exhibition and be surrounded by people *wanting* to help carry the equipment was an experience I'd love to repeat.

For all of you who were not there, I hope you'll go to their next one. It's a lorra lorra fun.

Steve Turnbull

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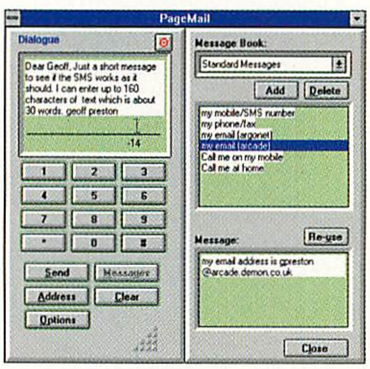
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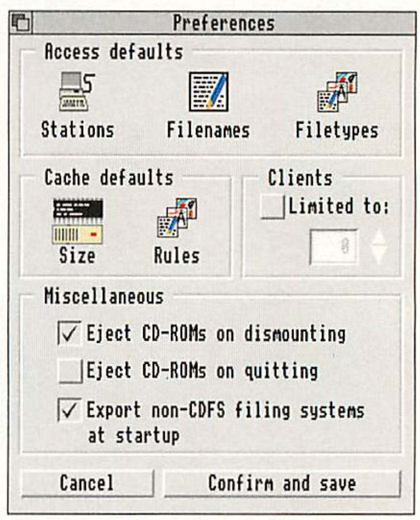




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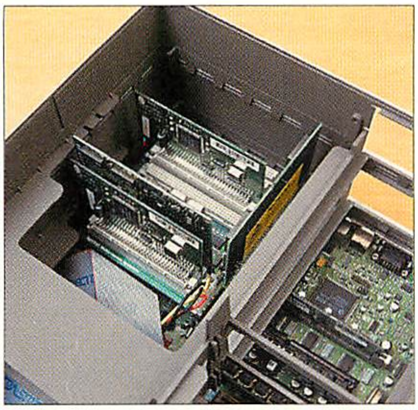
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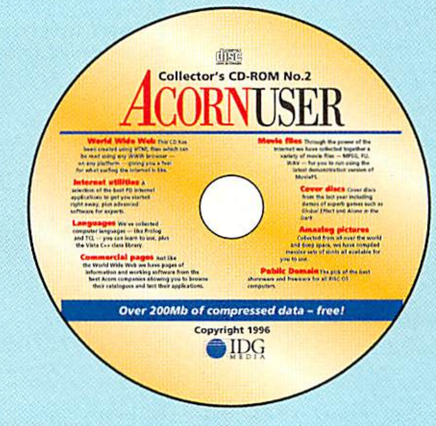


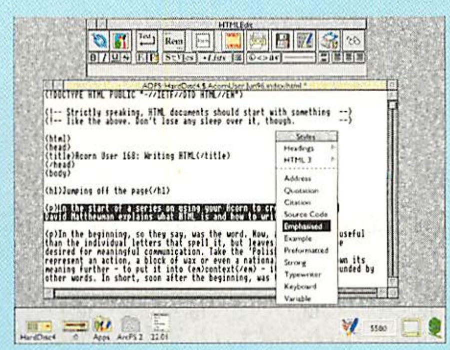


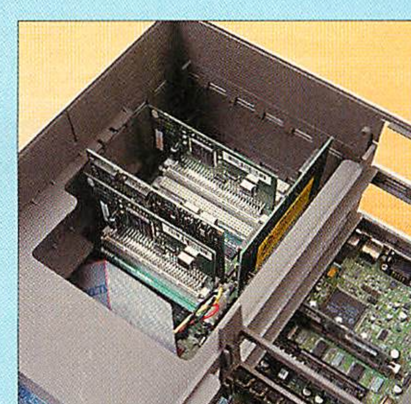
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- VTi modem offer see Page 62







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- Ancestry 2 review – better late than never
- Walter Briggs continues his exploration of creating Wild West art
- David Matthewman shows how you can use HTML pages to achieve different effects

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Risc TV

Risc TV is a new breed of multimedia digitiser. No processing power or bus bandwidth is required, because it uses special hardware to update the screen directly. So now you can watch full-size, full-motion and true-colour TV (or any other video source) in the desktop. An audio processor and TV tuner are fitted as standard, which are digitally controlled by the application software.



Real-Time 24 bit Desktop Video System £298.45!*

***Price of the complete package including expansion card, software, postage and VAT.**

Because it does not rely on processing power or true colour modes, Risc TV works just as well on A5000 machines. And you will always see millions of colours in the video window irrespective of screen mode! Naturally you can use Risc TV to grab high quality still images for DTP etc.

Audio can be selected from either the TV tuner, or from an internal audio source (e.g CD-ROM drive). This can be mixed into the computer's internal sound system, or output to a pair of external speakers or headphones.

Risc TV has been designed to be expandable with special feature connectors. A low-cost Teletext option will be the first available add-on.

- **24 bit framestore (16.7 million colours) updated at 50Hz.**
- **On-screen display sizes of over 1024 x 768.**
- **No DMA slot required.**
- **Real-time control of scaling, filtering, brightness, contrast, and saturation.**
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Please note: **Risc TV** works on A5000 & RISC PC machines (requires one free expansion slot). You must have RISC OS 3.1 or later, a hard disc and 2Mb RAM minimum. All hardware products come with full 1 years guarantee. E & OE.

Settling in

THE smaller, leaner, Acorn Computer Group PLC has successfully completed its move from its former palatial HQ in Vision Park, Histon, just outside Cambridge, to Newmarket Road just off the Cambridge ring road. The A45 Newmarket Road will be a familiar address to many in the Acorn world as it was Acorn's No.2 site before the company vacated its Cherry Hinton waterworks HQ four years ago.

A separate unit in the same Newmarket Road complex was previously used for training and although that particular unit now houses an unrelated company, a similar neighbouring one has also been occupied by Acorn. Until recently, Online Media (more accurately known today as Acorn Online Media or AOM) was exclusively based at the Newmarket Road site, but it is now also home for Acorn Risc Technologies (ART) and the Acorn Network Computing division (ANC).

Most of what was Acorn Education has now migrated to the new joint venture with Apple Computer, Xemplar Education Limited, which is about half a mile down the ring road at The Quorum, Barnwell Road, right next to Cambridge Airport. Apple and Acorn have equal half shares in Xemplar, but the company will effectively operate independently.

Xemplar will eventually be made up of about 50 staff, most of whom have already been recruited from Acorn and Apple ranks. We had a quick tour of the smart new Barnwell Road site and can report that Acorn machines on desks – at the time – outnumbered their Apple counterparts. But realistically, not all the Apple contingent had yet relocated to Cambridge. Mike O'Riordan, Acorn's former sales and marketing director whose responsibilities included the former education division, is not moving to Xemplar and is leaving Acorn for pastures new.

The new contact details are: Acorn Computer Group PLC, Acorn House, 645 Newmarket Road, Cambridge CB5 8PB, tel: (01223) 725000, fax: (01223) 725100, e-mail: info@acorn.co.uk, WWW:http://www.acorn.co.uk/

ANC, ART and AOM all have their own direct contact routes: ANC, tel: (01223) 518518, fax: (01223) 518520, e-mail: info@acorn.co.uk, WWW: http://www.acorn.co.uk/

ART, tel: (01223) 577800, fax: (01233) 577900, e-mail: info@art.acorn.co.uk, WWW: http://www.art.acorn.co.uk/

AOM, tel: (01223) 518518, fax: (01223) 518520, e-mail: info@acorn.co.uk, WWW: http://www.acorn.co.uk/

Xemplar Education Limited: The Quorum, Barnwell Road, Cambridge CB5 8RE, tel: (01223) 724724, fax: (01223) 724324, WWW: http://www.xemplar.co.uk/

NC boosts Acorn shares

Pundits have watched in amazement over the last month as Acorn's share price steamed past the £3 mark in the wake of the Oracle Network Computer publicity build up. That's a 25 per cent rise since the beginning of the year. The first NCs (Network Computers) built to the Oracle-led specification will probably start selling in the Autumn and will be based on Acorn designs. Acorn also has plans to produce its own NCs. With Oracle's outspoken CEO, Larry Ellison, predicting sales of a billion NCs in less time than it took the PC world to reach 100 million, you can see why the optimists are cashing in on Acorn shares.

Wakefield shows how to do it

THE Wakefield Acorn Spring Show held on Sunday, 19 May, was a complete success – in fact the most popular Acorn show with both visitors and exhibitors in years. An unofficial figure of 2,000 visitors to the show, which was run by Wakefield Acorn Computer Group in association with *Acorn User*, demonstrated that a non-commercial event can enjoy a high degree of success.

Although the event, held at the Cedar Court Hotel in Wakefield, was attended by fewer visitors than the much-missed Spring Harrogate show, the efforts of the WACG volunteers were widely recognised, with many visitors commenting on how smoothly the event proceeded. Sheridan Williams of Beebug told *Acorn User* that the organisers deserved a good pat on the back.

David Matthewman, AU's recently departed editor, told us he was gobsmacked at the turn out. Acorn's Peter Bondar and Chris Cox were kept busy demonstrating StrongARM abilities, while Jim Irlam was equally busy demonstrating his new Risc TV product (see separate story). Computer Concepts, meanwhile, found no shortage of customers for upgrades to *Impression Publisher* and *ArtWorks*. ANT was another centre of attraction as the show was the official launch pad for the *ANT Internet Suite Release II*.

There are certain advantages in organising a non-commercial event, but the success of the Wakefield show augurs well for the main Acorn World event which takes place at Olympia during the first weekend of November. By then, the NC and StrongARM Risc PCs should be a commercial reality, perhaps heralding a renaissance in Acorn's fortunes all around.

SpaceTech releases TopModel

SpaceTech, best known for its *PhotoDesk* image manipulation package, has been appointed international distributor for the impressive *TopModel 3D* modelling package, which is produced by Sincronia Soluzioni Multimediali of Italy. *TopModel* uses hand-written ARM machine code routines to maintain performance during complex rendering operations which can endow *TopModel* images with stunning depth and reality.

The £99.50 + VAT *TopModel* package has a feature list as long as your arm, so if you need to know more, contact SpaceTech on tel: (01305) 822753, fax: (01305) 860483, e-mail: sales@spacetec.demon.co.uk, WWW: http://www.digibase.com/spacet.htm

New ANT Internet Suite

If you'd like a piece of the Oracle NC Acorn is developing for the database software giant, you could go out and buy Release II of the *ANT Internet Suite*. ANT is developing the browser for the very same project and some of that work has rubbed off onto the new Internet Suite.

Priced £99 + VAT (£10 to registered users), release II has numerous improvements designed to keep up with the rapid development of Internet protocols and features. For example, the Fresco browser now supports tables, client-side image maps, local and global history lists, plus some new Netscape and HTML 3.0 extensions. There is a lot more to be found out about ANT's new Internet Suite and to contact ANT Ltd, phone (01223) 567808, fax: (01223) 567801, e-mail: sales@ant.co.uk, WWW: http://www.ant.co.uk/

PD gets cheaper

David Holden of the Archimedes Public Domain Library (APDL) has cut his CD-ROM prices. From 1 June, CD-ROMs PD1 and PD2 come down to £14.95 each or £27.50 for both. Clip Art CDs DTP1 and DTP2 fall to £19.95 or £37.50 if bought together. DTP1 has been re-mastered for improved ease of use. Owners of the old DTP1 CD can obtain the new version by returning it with £4. APDL, tel: 0181-778 2659.

NC Smart Cards to replace portable PCs?

A MAJOR feature of the prototype NC Acorn Network Computing's CEO, Malcolm Bird, showed *Acorn User* is a Smart Card facility which enables users to conveniently carry around their unique network identity and properties. The idea is that you would no longer need to carry a bulky notebook PC around with you anymore, instead you would simply insert your personal NC Smart Card into any NC terminal and instantly that terminal would behave as if it were your personal computer.

The NC vision suggests that these cheap, sub-$500 Internet and Intranet browsers would eventually be readily accessible everywhere, both in public places from airport departure lounges, on aircraft, trains, shopping malls, libraries, etc. and in offices and homes. All your files will be stored centrally and securely by your Internet service provider, ready to be accessed from any NC enabled with your ID via your Smart Card and a password, wherever you may be – which could also include access via a conventional desk PC or portable using a wireless communications link — as long as a suitable Smart Card reader interface was attached.



The story goes that the Smart Card idea came from Olivetti Research Labs (ORL) in Cambridge, which has close links with Acorn. ORL had previously experimented with an application for its electronic Active Badge system, called Teleporting. Active badges also contain your ID and can be sensed via strategically placed sensors.

Originally, Active Badges were designed to enable people to be located in a building and for messages to follow the recipient around. Teleporting extended the idea so that when an Active Badge wearer approaches an un-used workstation, that computer senses the identity of the wearer and automatically configures the workstation to be set up as that person's personal machine.

Initial Acorn NCs will be driven by a new version of the ARM7500 RISC chip designated FE. This new chip adds a floating point processor, necessary for optimal execution of Java code, and support for faster EDO (extended data output) DRAM. The ARM7500FE will be clocked at 40MHz, there will be 4Mbs of EDO RAM (a new type of fast memory), and the main operating system and Internet/Web browser will be on ROM.

Integrated support will include Sun Java, Oracle Media Objects and Macromedia Director. Acorn has also announced that it has developed a much more powerful StrongARM version of the NC which will be more suited to high-quality multimedia applications.

The NC System ROM will be upgradable by a simple plug-in card which looks remarkably similar to a PCMCIA Type 1 device, though there is no stated PCMCIA compatibility in the specification. There will be no local storage bar the 4Mb system RAM which will be preserved in a sleep mode when the device is switched off.

All user files will be stored remotely via the network on the server machine he or she will be registered with, so there are no expensive hard drives, CD-ROM drives or even a floppy disc drive in the basic specification, though some NC variants will include these as options.

The Acorn prototype we saw is very low profile, finished in black and with a slightly 'aerodynamic' design. The smart card reader is centrally situated and various ports can be found at the rear. Familiar Acorn technology is easy to spot. The ROMs contain a derivative of RISC OS and there is a podule slot into which your choice of network interface card goes.

This could be an ethernet card, ATM card or cable modem card. Ordinary PSTN modems will also be an option, though Malcolm Bird doesn't see the prospects for even a fast 28.8Kbps modem being very bright as most consumers wouldn't have the necessary patience to wait for downloads and other command responses.

It's great to see Acorn under the spotlight once more and in-house technology gaining well-earned recognition. However, the future success of the NC project is not guaranteed and even within the NC alliance, there will be competition from other hardware manufacturers. It will be a tough battle for Acorn, but it's already in the lead, especially in the cost-sensitive sector of the market which should also see the greatest sales volumes.

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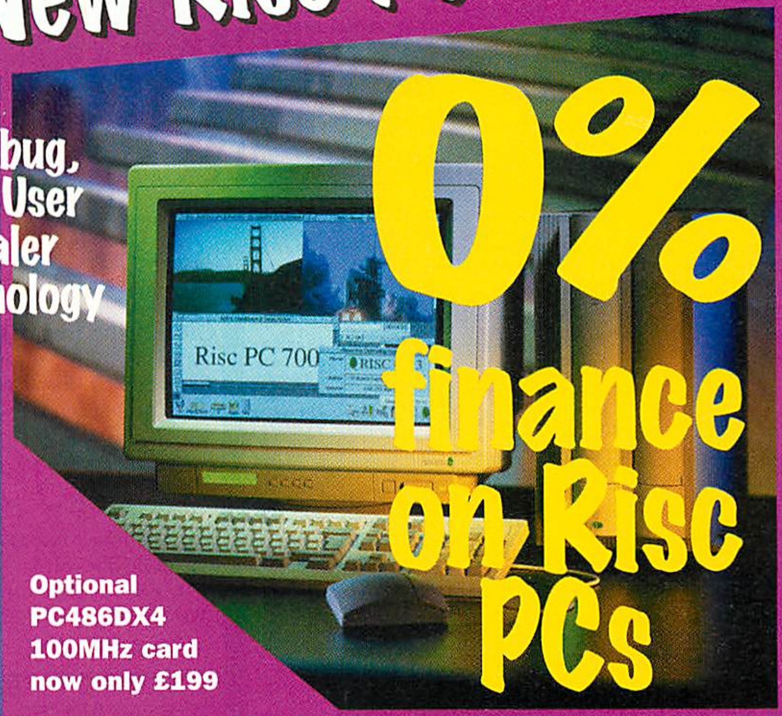
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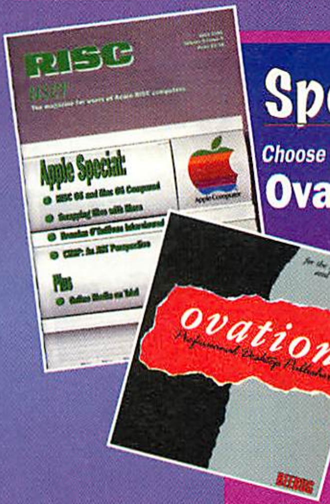
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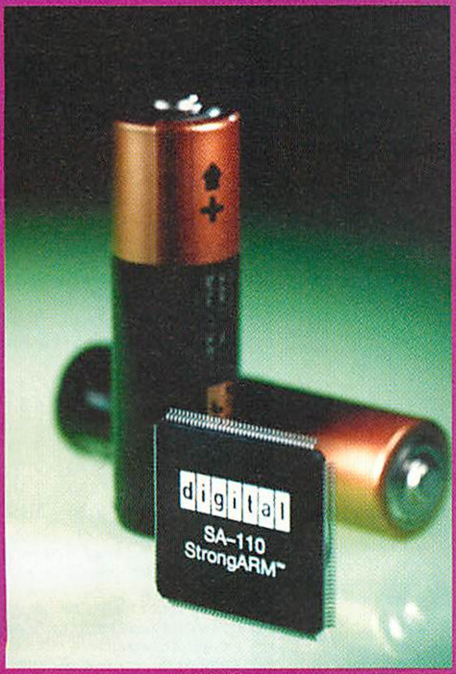
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E.&.O.E 01-06-96

StrongARM developments

ACORN has been showing off real StrongARM processors doing rather impressive things inside Risc PCs. Admittedly, the StrongARMs we saw were early prototypes, but their performance has generated enthusiasm we haven't seen from Acorn and its supporters probably since the Risc PC was launched two years ago. Most of us are chugging away on trusty 30MHz ARM610-based Risc PCs, or even older and slower hardware.

Consider then that the prototype 220MHz StrongARM RiscPCs we saw were making a benchmark 40MHz ARM710 Risc PC look decidedly pedestrian – the justification for such enthusiasm is immediately apparent. On average, StrongARM seems to guarantee a five-fold acceleration in performance over a 40MHz ARM710 and some tasks are accelerated substantially more.

Although being totally unscientific in the calculation, the StrongARM would seem to be a real Pentium-killer. Acorn claimed that the 30MHz ARM310 Risc PC was roughly equivalent in performance to a 486DX2/66 PC. In PC terms, a good 75MHz Pentium PC is around 120 per cent faster than a 66MHz 486DX2.

So if a StrongARM is at least 500 per cent better than a 486DX2/66, you might want to tease your PC-owning friends that a StrongARM must be about 4 times faster than a Pentium 75. Even Intel can't yet boast a 300MHz Pentium! The above comparison is a bit academic, but the underlying message is as clear as it can get — Acorn is back in the performance hunt with the StrongARM. And the chip still doesn't need a heat sink.

What's more, the predicted headache of key RISC OS applications not taking too kindly to a StrongARM version of the RISC OS seems to have been largely overcome. Acorn demonstrated both *Impression Style* desktop publishing and *Artworks* drawing packages working like never before on a StrongARM machine. There is still work to be done in terms of compatibility and Acorn has been in discussion with Computer Concepts regarding new versions of *Impression* and *Artworks* for StrongARM Risc PCs.

Acorn is expecting great demand for the StrongARM and is taking steps to avoid a supply backlog. ART's Peter Bondar told *Acorn User* that an initial run of 5,000 StrongARM Risc PC upgrades has been ordered and a second run of a further 5,000 can be quickly turned around should the demand warrant it. If 10,000 are eventually realised, no less than one in three Risc PCs produced to date will be StrongARM equipped as a result.

So where does this leave the Simtec Hydra multi-processor card which was launched to the general public recently? Peter Bondar says a Hydra fully populated with ARM710s will still not match the performance of a 220MHz StrongARM. But the future for the Hydra remains bright — imagine one armed (pardon the pun) to the teeth with StrongARMs and you might be knocking on the door of what would have been considered supercomputing power just a few years ago.

At £249 + VAT, which includes a new version of RISC OS on ROMS and CD ROM, StrongARM for your Risc PC looks irresistible. Clan club members had the chance to reserve their own StrongARM priority order before a 19 May deadline. Early orders are likely to be met in September and there will be a further incentive – a £99 special offer price if you order one with a new Risc PC between now and September.



Peter Bondar expects high demand

More details on NC emerge

ORACLE rounded up a glittering collection of allies to officially launch the Network Computer initiative at an event in San Francisco in the middle of May. All the big names, Sun Microsystems, Apple Computer, IBM, Netscape Communications, bar one – Microsoft – lined up to deliver their plans to support the Oracle-inspired Network Computer ideal. Acorn (as everybody must know by now) is working for Oracle to design the reference hardware platform for an ARM-based NC. At last, we can bring you hands-on details of the Acorn-developed prototype NC:

Oracle has hinted that the first NCs to market before the year is out will be ARM-based, but Acorn's design will eventually have to compete with NCs which use Sun Sparc, PowerPC and even Intel processors. Acorn's trump cards are its lead in the race to a market-ready product, low-cost and experience in delivering acceptable quality graphics via ordinary TV displays.

The May 20th event was held to deliver the 'NC Reference Profile 1', an extensive set of common guidelines which will hopefully establish the Network Computer as a hardware-independent computer and inter-manufacturer compatible standard to challenge the conventional PC and bring computing to a much greater section of the global population. One aim is to make multimedia Internet computing as ubiquitous as telephone and television services. The press release talks of promoting competition in a new class of communications and commerce devices for use in homes, schools, businesses and institutions.

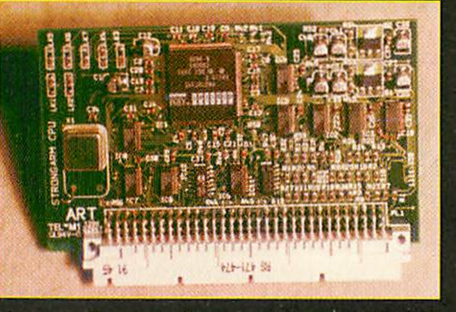
The plan is that NCs will take many forms, including desktop machines, laptops, video phones, pagers and even conventional PCs. All will be able to be connected to the Internet or a private Internet (also known as an Intranet). Some devices will have built-in applications, but most will rely on dynamically downloading compact applications from the Internet as and when they require them. This is where Oracle's real interest lies – its business is in servers and databases, but sales of low-cost access devices will help build Oracle's core business.

Details of the NC Reference Profile 1 include:

- a minimum 640x480 (VGA) screen resolution
- a pointing device (mouse or track ball)
- text input capabilities and audio output.

Internet standards like TCP/IP, plus World Wide Web protocols HTML and HTTP, plus other mail protocols (SMTP, IMAP4 and POP3) also lie at the heart of the Profile. Sun's Java language will handle hardware-independent application execution.

StrongARM in education?



Xemplar Limited has no plans to include StrongARM-based products in its price list for education customers. The reason, according to managing director Brendan O'Sullivan, is that the forthcoming ARM810-based Risc PC will be adequate for most education customer needs. Another reason is that the StrongARM will be a more difficult upgrade for existing users and compatibility problems with some software packages could cause problems which schools would not be willing to face.

However, there will be nothing to stop any education customer from purchasing a StrongARM solution from a dealer outside Xemplar. O'Sullivan has stressed all along that Xemplar is there to serve the education customers' needs and he added that if schools started to form long queues for StrongARMs, Xemplar would respond accordingly and start to supply it.

CD-ROM drives faster than ever

JUST last month we brought news of Eesox's new 8X ATAPI Hold CD-ROM drive. Could the remarkable performance of 8X technology be about to be eclipsed by 10X drives? Pioneer, who was one of the first CD-ROM drive manufacturers to break through into 4X technology when double-speed was still the norm, has announced its Super 10X speed CD-ROM drive.

Spinning CDs at this speed and getting the most out of the performance needs some clever technology. Conventional CD-ROM drives work to maintain the track data rate at the laser pick up – which is called Constant Linear Velocity (CLV) – so the CD spins faster when the pick-up is nearer the centre of the CD and slower when the pick up moves out to the edge.

Hard drives, which are much faster than CD-ROM drives, use Constant Angular Velocity (CAV) and so does Pioneer's 10X speed mechanism. This means Pioneer's 10X drives can deliver 10X performance only when the read head is at the edge of the CD. However, even at the 'slowest' innermost track, data will be streamed off at 660K per second, which is slightly better than 4X performance. In a sense, the Pioneer isn't a 'true' 10X drive as sustained data transfer ranges between 4X and 10X – it's more of an optimised 4X drive, but on the whole it should give most other high speed drives a run for their money.

To cope with the maximum sustainable data rates, Pioneer also had to revamp the drive electronics too. Both IDE (ATAPI) and SCSI versions of the Super 10X will be introduced, with the IDE version arriving in August. Pioneer forecasts a retail price of £199 for the IDE version and £250 for the SCSI version. Pioneer High Fidelity (GB) Limited, tel: (01753) 789789, fax: (01753) 664001.

Eidos reveals NC link

EIDOS plc, the software video compression company, has announced that it has licensed Oracle the right to incorporate its software compression technology into the Oracle Network Computer. Last month Eidos, which has a long-running relationship with Acorn, revealed it was interested in applying both the Simtec multi-processor ARM upgrade and StrongARMs in Risc PCs for real time digital video compression tasks.

The wide ranging licensing deal with Oracle means Eidos is making its video compression technology available to all NC developers, including Acorn. Eidos says this technology will form part of an advanced video software architecture for the NC. Eidos says it is extremely enthusiastic about the NC and has committed to developing its own video-enabled applications specifically for use with the NC platform.

The first application will aim to provide NC users with a videophone facility. Stephen Streater of Eidos Technologies commented: 'With the Oracle licence in place, Eidos is creating a platform-wide de facto industry standard for software-based videophones for use over the World Wide Web.' Eidos says it can deliver 6-12 frames per second at a resolution of 129x96, colour depth 15-bits per pixel, and at a modem data rate of 28.8Kbps. Using ISDN (digital phone connection) at 128Kbps, Eidos says 6-15 frames per second is possible at a resolution of 240x192 and a 15-bits per pixel colour depth.

Burns multimedia event

From 15 July, visitors to the Robert Burns Centre in Dumfries will be able to attend a limited number of free screenings of the award winning CD-ROM 'The World of Robert Burns'. For six days there will be two daily screenings in the Robert Burns Centre cinema courtesy of Cambridgeshire Software House and The Dumfries and Galloway Education Department.

The screening will be made possible by linking a Xemplar-supplied Risc PC to the projection system in the cinema. Cambridgeshire Software House, tel: (01480) 467945

Risc TV

Not a new risqué satellite channel, but the latest product from Irlam Instruments. Risc TV is a video display card which can display full motion 24-bit colour in the desktop without affecting the main system processor or bus loading.

The display works irrespective of the native RISC OS screen mode currently set, so it's always 24-bit colour. The display itself can be scaled in real-time up to 1024x768. The card can also be used as a still frame grabber and the plug-in module system can accept an optional teletext decoder.

Designed for the Acorn A5000, A7000 and Risc PC, the Risc TV is priced £249 + VAT. Irlam Instruments, tel/fax: (01895) 811401, e-mail: info@irlam.co.uk.

Xemplar deal for teachers

Xemplar Education is to enable teachers to buy the computers it supplies at the same specially discounted rates enjoyed by schools. Anything, within reason, on the Xemplar price list will be available to teachers at the Xemplar lower education price point. Xemplar's salesdesk is on tel: (01223) 724200

Acorn

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Maths Gen. Maths worksheet creator from Creative Curriculum Software.

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Zool. Fantasy arcade game from Gremlin.

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Hardware Options:

- 2-4Mb RAM
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All trademarks acknowledged.
*Cheques: allow 5 working days to clear.

THE A3010 COMPUTER

The A3010 is ideal for schools, small businesses and, of course, in the home. The A3010 shares the same processor and main electronics as the A3020 & A4000 computers. It has one internal expansion slot, a serial port, two joystick ports and a parallel printer port.

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- Built in wrist support
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Ergo Keyboard

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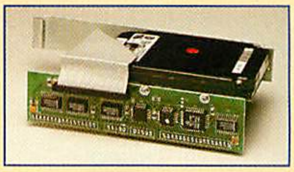
	120Mb		240Mb	
	ex VAT	inc VAT	ex VAT	inc VAT
A3020	£99.00	£116.33	£129.00	£151.58
A3010 incl Interface	£129.00	£151.58	£159.00	£186.83
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Telephone: 01728 621222 Fax: 01728 621179 e-mail: sales@castlet.demon.co.uk

A game of cards

MORE competition is entering the PC card scene as CJE Micros gets its own version of the 586 card up and running. By the time you read this it should be available – though possibly in limited numbers. The card uses an AMD 586 fitted with its own fan on a modified MK2 board – and clocked at 133MHz!

Tests apparently show the expected 20-25 per cent improvement in speed over the 100MHz chip – but only on tasks that require processor power rather than intensive bus/disc use which will mask the chip's extra power. CJE doesn't expect any extra problems from its card over Acorn /Aleph 1 versions and says it will run with the PCx86 software provided it's properly configured.

Prices are expected to be similar to Acorn/Aleph cards – perhaps a touch lower, with similar trade-in deals.

To contact CJE, tel: (01903) 523666, fax: (01903) 523679 or look them up on http://www.art.acorn.co.uk/coft/CJE/

OU could try harder

LAST time I promised to let you know whether Netscape for Windows 95 runs on the PC card. I'm pleased to say it does and my wife is now happily logging on to the OU site. I've only come across one 'bug' (in fact this will probably happen whatever software you ask to use the RS232 port), which is that if you log on via Windows, the port isn't released back to RISC OS until the card is fully shut down. Closing the connection or even exiting Windows isn't enough.

As for the OU's service, (aside from the fact that the OU doesn't recognise Acorns – or even Apples!), the main bugbear is that if you've already got Net access and don't need the free software, the connection doesn't give you much extra.

If the OU really wants to help its students it should arrange privileged access to academic resources that ordinary mortals can't reach.

What a cracker

I IMAGINE there are two main reasons for most of us putting a PC card into an Acorn: to get access to software that isn't available on our preferred platform, and to be able to run the same sort of software that is used by people we work with – how many offices are Acorn based that you know of? I spend much of my time writing and, increasingly, clients want the copy on disc. So I have to supply it on floppy – and in a file format they can read. I'm sure I'm not alone.

Acorn has produced PC Exchange to facilitate this process. But there's another option you might like to consider – Colton's *Fireworkz* suite which includes WP, database and spreadsheet. Long time Acorn users will probably remember the View family with affection. It spawned the integrated and idiosyncratic *Pipedream* on the Z88 portable which was, in turn, ported to RISC OS. But *Pipedream*'s idiosyncrasies put off many users. So Colton developed *Fireworkz* which is far more conventional in operation.

Of great interest to PC card users is the fact that *Fireworkz* is available for both RISC OS and Windows (3.1 and 95) – and whichever version you use, it looks and operates much the same. Where it really scores for Risc PC users is that the software will work on the same file from either platform.

All you have to do is save your file in the drive-c partition of your Risc PC hard disc. This is no more difficult than saving it anywhere else – I've set up a dedicated directory so the files are easy to find. Getting at your files under RISC OS is done in the usual way. When you fire up the PC version of *Fireworkz*, simply seek out your directory and any *Fireworkz* files are instantly available for use. That means you can work on the file under RISC OS or PC and save it to floppy disc easily in either format. Once again, using rich text files (.rtf) gives good compatibility with PC WPs like *Works* and *Word*.

But is *Fireworkz* any good? Actually I think it's superb. Unlike PC software it doesn't have the kind of bells and whistles that look superficially impressive but actually waste time in all sorts of ways. On screen it operates faster than 'regular' PC programs and is, for me at least, far more intuitive as well. If you want to use RISC OS but have to communicate in PC land, *Fireworkz* is something you really should check out.

Finally, in case anyone from media-land is reading, consider this: *Fireworkz* will work properly in columns, which means it will easily do what other PC-based software never delivers – you can write scripts with it. In my view, *Fireworkz* ought to be standard on all PCs in radio and TV production offices. It is most certainly going to be my program of choice from now on.

Having a trashing time

Aleph One's next generation faster driver software has run into a problem shown up by the Beta released 1.995 – under some circumstances the software can apparently trash your hard drive!

This only occurs when using a DMA SCSI card and a CD-ROM, I'm told, but clearly Aleph will want to get the problem sorted before anything is released. So, at least at the time of writing, the much improved version 2.00 (which is also, as I understand, the first version of x86 to officially support Windows 95) is on hold until this bug is tracked down.

Meanwhile, a fix for those stripey icons in Windows 95 is available and a new faster windows driver is nearing completion. For network-oriented folk, Aleph One tells me it is working hard to make network installation much easier – if you're interested it may be able to help by the time you read this.

Contacts

If you have an Aleph One card you can e-mail: support@aleph1.co.uk including your cards serial number. Acorn customers should go to Acorn. For information: info@aleph1.co.uk or tel: (01223) 811679.

Keep the faith

If you are trying desperately to keep faith with Acorn while all around is PC, you might, like me, be tempted by the heavyweight, bankbusting (400 plus quid on 24 discs!) Office Pro suite. But be warned, my disc version won't install (a small problem(!) reported by others too), though I've been told the CD version does work OK. I've persuaded Word to install on its own. If and when I get the other 45 Megs onto my hard drive I'll let you know how it performs.

Contacting me

You can contact the PC page by writing to me, Mike Buckingham, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield, Cheshire, SK10 4NP, or e-mailing to aupcpage@idg.co.uk

Showroom open Mon-Sat 10-18.00 hrs (All prices exclude VAT) Carriage included except where indicated

CD-ROM



All CD-ROM's are Multi-Session, PhotoCD, CD-DA, White Book compatible & come complete with data/sound cables, screws & fitting instructions. SCSI drives require an interface with CDFS 2.20 or greater. Driver included.

Internal Drives (Tray Loading)

Panasonic 4x CD ATAPI	£55
Panasonic 6x CD ATAPI	£Call

These drives can only be used on a RiscPC or A7000 with RiscOS3.5 or later. Data cable, CD audio cable, fixings & instructions included. No further hardware is required.

Sony 2x CD SCSI 275ms	£110
Pioneer 4.4x CD SCSI 150ms	£190

PCW Verdict - 'It's extremely quick, and a bargain.'

Toshiba 6.8x CD SCSI 135ms	£270

External Drives

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Toshiba 6.8x CD SCSI 135ms	£320

SCSI cards

Morley uncached SCSI card	£130
Morley Cached SCSI card	£160
PowerTec SCSI II card	£165

Hard Discs

IDE 3½" HardDrives		SCSI 3½" HDrives	
635Mb 12ms	£130	540Mb 12ms	£145
850Mb 12ms	£Call	1.28Gb 12ms	£220
1Gb	£Call	2Gb	£Call

Add the relavent accessories from below.
ForA3000/A3010 hard discs see Hard Card section below.

Syquest Removable SCSI Drives

105Mb Internal	£80	EZ135Mb External	£169
105Mb External	£159	EZ135Mb Cartridge	£20
270Mb Internal	£250	105Mb Cartridge	£25
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Work just like your hard drive except they are removable giving unlimited capacity. Data transfer speeds around 1Mb/s - ideal to backup your hard drive. Internal drive requires 5.25" bay.

Internal SCSI	£170	Zip Discs	£15
External SCSI	£160	Zip Discs (10Pack)	£115

Hard Disc Interfaces/Accessories

IDE interface	£79	50-50C SCSI Cable	£10
Morley Uncached	£130	25-50 SCSI Cable	£10
Morley Cached	£160	SCSI II-50C Cable	£25
Cumana SCSI II	£165	External case/PSU	£79
PowerTec SCSI II	£165	2nd IDE Drive Kit	£15

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2 Transport	12 AnimalsGB
3 Costumes	13 Chem Signs
4 Entertainment	14 Fire/Emerg Sn
5 Bugs 2 Slugs	15 Hazard Signs
6 Road Signs	16 Safety Signs
7 Sports Equip	17 Xmas1
8 Sports Figures	18 Xmas2
9 Dinosaurs	19 Xmas3
10 Symbols	20 Xmas4



RiscPC Computers

All Acorn computers include 1yr on-site maintenance. 3yr On-site is available. **20/20 finance available, ring for details.** For PC Cards see PC Card section below.

14" Monitor Systems (AKF60)

RPC600 4MHD425	£1128
RPC600 4MHD425+4xCD	£1179
RPC700 5MHD425	£1319
RPC700 5MHD425+4xCD	£1370
RPC700 10MHD850	£1658
RPC700 10MHD850+4xCD	£1709

17" Monitor Systems (AKF90)

RPC600 4MHD425	£1446
RPC600 4MHD425+4xCD	£1497
RPC700 5MHD425	£1639
RPC700 5MHD425+4xCD	£1690
RPC700 10MHD850	£1957
RPC700 10MHD850+4xCD	£2008

Add £20 for Iiyama MF-8617E
Add £85 for Iiyama MT-9017E

20/20 Finance

on Acorn Systems (0%APR)

20% deposit (min) and 20 interest free monthly payments. Available subject to status. Ring for details.

A7000 Systems with 14" Monitor

A7000 2MNET	£799
A7000 2MHD425	£799
A7000 2MHD425+4xCD	£899
A7000 4MHD425	£867
A7000 4MHD425+4xCD	£969

RiscPC Multimedia CD-ROM Pack

Includes 25W stereo mains speakers, Hutchinsons Encyclopedia & RiscDisc (Vol.1) together with one of the following CD-ROM drives.

4x ATAPI CD Pack	£120

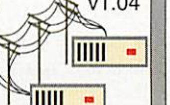
The above can only be used with RiscOS 3.6 machines.

4.4x SCSI CD Pack	£375

The SCSI Pack includes a Morley cached SCSI Card. Add £20 extra for SCSI 2 Card.

QuickLynk£28+VAT

With 5m Local Cable £34+VAT
With 10m Local Cable£39+VAT
With 20m Local Cable£45+VAT



QuickLynk allows you to access another unattended RiscOS computer remotely using the serial port via modems or locally using a cable to connect the 2 computers. Each computer can be configured to allow access to any attached filing system device eg ADFS, IDE, SCSI, CDFS, etc. Once connected, files can be transferred to/from the remote computer. Other features include password access, auto dialler with phone book and chat mode to send messages to remote computer/user. Transfer rates up to 1.9 kbytes/s can be achieved with older computers, eg. A410, A3000, rising to 11.4 kbytes/s on the RiscPC range. The transfer rate is limited by the speed of the serial port. QuickLynk cannot at present be used directly from programs/command line. Requires RiscOS 3.10 or greater, ring for details.

QuickTile £25+VAT



QuickTile allows you to create posters from ANY RiscOS application, including Impression. Simply enter the size of poster required & select PRINT from the application! QuickTile does the rest, printing each tile with crop marks and tile references. New features include the facility to print inverted crop marks or no crop marks. QuickTile can only be used with the RiscOS printer Driver or TurboDrivers.
Requires RISCOS 3.10 or later.
Return disc to upgrade for £4 Inc VAT.

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When purchased with a System/Seperately		
5x86-100	£399	£499
486DX4-100	£199	£299
486DX2-66	£149	£249
486SX33	£99	£199
StrongARM	£99	£249

Trade-In discounts of £100 for DX2/DX4 cards and £200 for PC5x86 cards are available when trading in a ACA42 486SLC33 PC card.
Add £6+VAT carriage for PC cards.

RiscPC Upgrades

ESP16 bit Sound Card	£60
YES 16 bit Mozart Card	£60

Add 2+VAT carriage to above.

2nd Slice Case Upgrade	£99

Add 7+VAT carriage to above.

Memory Upgrades

RiscPC Memory (SIMMS)

4Mb	£40	8Mb	£75
16Mb	£180	32Mb	£Call

RiscPC VRAM Memory

1Mb	£100	2Mb	£160
1-2Mb u/g (exchange)			£100

Monitors

AKF50 14" 0.28dp	£275
Ilyama MF-8617E 17"	£540
Ilyama MT-9017E 17"	£600
Older computers will require an adaptor	£12

Printers (Include Cable)

Canon BJC-210	£189
Canon BJ-230	£265
Canon BJC-4100	£240
Canon BJC-610 (720dpi)	£350
HP LaserJets Printers	£Call

Add £40 to above printers for TurboDriver

I³ Networking

A30X0 EtherLan 102	£125
A4000 EtherLan 200	£135
A4000 EtherLan 201	£135
Archi EtherLan 514	£125
RPC/A7k EtherLan 602	£105

Add £15 to above prices for Access+.

NetCubes	**£Call**

Easy to install 10baseT Hub pack for up to 6 computers. Ring for more info.

RiscOS 3.1 Upgrades

Single Rom set (fitting instr./no discs)	£34
3 Rom sets (fitting instr./no discs)	£79
10 Rom sets (fitting instr./no discs)	£255
Documentation (Guide & Discs) (0% VAT)	£29
Carrier board for A300/A440	£22

Portable Computers

Acorn A4 Portable	£1149
Pocket Book II (256k)	£205
Pocket Book II (1Mb)	£285
Psion 3a (1Mb)	£270
Psion 3a (2Mb)	£305
AutoRoute Express UK/Eire	**£55**

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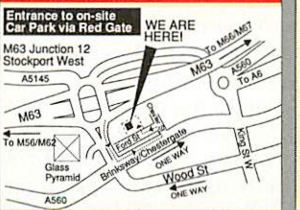
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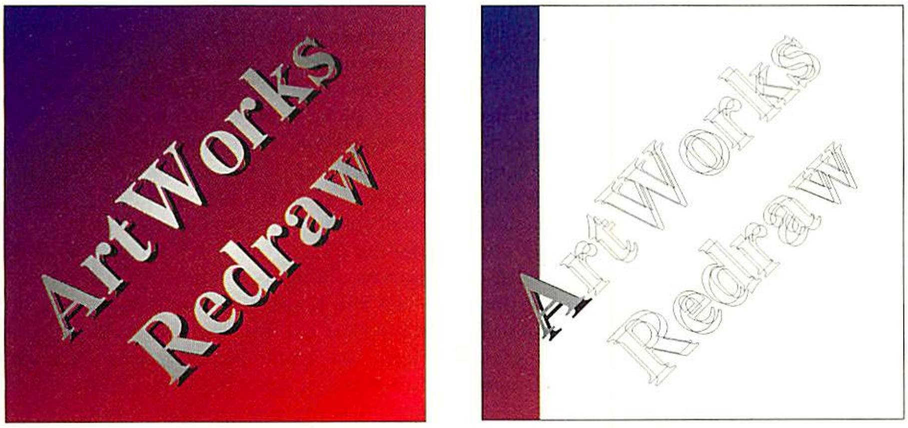
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JUL 96

Once upon a time there was this CPU



An approximate visualisation of the speed difference between a 228Mhz StrongARM (single cache) and a 40 Mhz ARM700 (on right) in otherwise identical Risc PCs

BY the time you read this I doubt there will be any Clan members owning Risc PCs who will not have ordered their StrongARM upgrade. The reason for not buying one (bank balance permitting, of course), is something that should be urgently addressed by a psychiatrist, for this upgrade is surely the largest performance leap since BBCs became Arcs. Also, the card comes at a price paid by PC speed freaks for a mere 30 per cent to 50 per cent performance hike.

My enthusiasm for the StrongARM has come after a demonstration of a very pre-release unit at a recent Acorn journalist's open day. The 220Mhz chip, the first and most tame of the projected StrongARM CPUs, only benefited from a primary cache, yet was running RISC OS applications typically five to six times faster than a 40Mhz ARM700. Though these are not official figures, it is reasonable to say that this represents the kind of performance increase from a Slowpok Rodrigues (50Mhz) 486 to a Speedy Gonzales (166Mhz) Pentium.

But here comes that old argument again, this time cleverly disguised as a parable for those of you who have begun to gain spiritual wisdom from this eternal question:

There once was a man who had the fastest camel in Arabia. He and his camel lived a quiet life just outside the biggest trading post in the land. Everyone there had fast camels because the faster your camel, the more delivery work you got. But alas, this man did not see the success he and his camel deserved, though he was the only one that guaranteed next day delivery before noon or your silver pieces back (and he accepted American Express which no-one else had even heard of, but that's a different story altogether). Then one day, lamenting over his lack of business growth, he went to the Gates of the town to where the wise old man used to be.

'Yo, Bill' said he with respect to the wise old man's wisdom and oldness, ' look, 'ere. Why am I not getting any work?' Bill of the Gates replied wisely: 'It's a damn fine camel you got there, son, but does it have an Intel inside?'

The moral of this story is that there are no morals in marketing. Despite both StrongARMs and PowerPCs now being faster and cheaper than anything Intel has or has planned, Intel and Windows still continue to call the shots. And it's all down to marketing; the marketing success of the Wintel and the failure of companies such as Acorn and also Apple to fairly challenge this.

Therefore, unless Acorn, with its brand new anabolic camel, can suddenly get some serious publicity and attract some big software houses to write software for it to attract a wider audience than the 30 or 40 thousand odd Risc PC users out there, I cannot realistically see RISC OS or many new DTP and graphics products being developed. That's not to say that there isn't life left in RISC OS for graphics users as I have said time and time again, but with the speed and ferocity of development seen for Windows-compatible hardware and software, RISC OS applications may, in the not so distant future, become technology of the past.

I hope the enormous potential of third parties like Sibelius, Eidos, and Acorn companies like ART and ANC can prove themselves in the world marketplace to more big players such as Oracle and then, perhaps, companies like Autocad or even Xara might start writing RISC OS applications. With CHRP technology and StrongARM-RISC OS cards just around the corner, this is a realistic possibility.

But for now, forget all that and think about your Risc PC. If you are a graphics user it is madness not to upgrade to StrongARM, especially at this time when the future for Acorn and RISC OS has not looked brighter for nearly a decade. Ride on!

CD-ROM apologies

I am dreadfully ashamed to inform all those who kindly sent in their images for inclusion on the next CD-ROM that, due to illness and hence not being able to compile and format your images, I'm afraid there will be no Graphics Page Reader's Gallery on the present shiny silver cover disc.

The one bit of consolation is that the collection is becoming quite sizeable now, so when the next CD comes along, hopefully before the end of the year, the gallery should be even more impressive than it would have been this time.

Spacetech news

The Wakefield Show took place after this page was written so I cannot report any hot-off-the-press news about new graphics developments released at the show.

However, before Wakefield, Spacetech informed me that it would be demonstrating release versions of its acclaimed *Photodesk 2* and also, but without the final box and manual, the superb *Top Model (it was, Ed)*. A few months ago, with Acorn's focus turning almost completely to schools for a while, the *Top Model* developer, PC Pool, was thinking of concentrating its efforts on a less professional, more educationally-oriented 3D packages.

But with the recent restructuring of the Acorn group and with the imminent arrival of StrongARM (see main article), things once again look up for 3D graphics on RISC OS. Spacetech is, I am sure, happy with this situation as it has secured full UK distribution rights to the package.

As soon as boxed versions of both packages land on my desk, they shall be comprehensively reviewed. But for more information now, contact Spacetech on (01305) 822753.

Contacting me

You can contact the graphics and DTP page by writing to me, Jack Kreindler at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by email to augrafix@idg.co.uk.

Public Domain

Howzat!

With the new season in full flow, Cricket fans should check out a complete computer-based scoring system by John Fairhurst. The application uses a very comprehensive desktop-based interface to facilitate match scoring. It's good software, but whether anyone would want to actually score in front of their computer is another matter. Perhaps it's one for the professional scorers only. The CSB suite is available from the Datafile PD library.

Public Risc PD

Jim Jordan of Nottingham is launching a new PD library and would like to appeal for contributions of new PD. Contributors will receive a free disc of PD when the library starts up. Contact Public Risc PD at: 38 Ribblesdale Court, Chilwell, Nottingham NG9 5PH.

Copernicus

Copernicus is a low priced but high quality astronomical almanac program for Acorn machines. The software produces detailed star maps and guides for predefined locations and times, as well as providing draw and printer output. A freeware demo can be obtained from: Ray Middleton, 38 Wensley Green, Leeds LS7 2ND.

Beebware on hold

The Beebware PD library has had to suspend its PD service until further notice, due to restructuring of the library. I will give you more information as soon as it is available..

Symposium

Initial reports of the Symposium demo party, mentioned in last month's issue, sound a little disappointing, with several groups holding back their unfinished entries for a later release date. I'll hopefully bring you reviews of what was released next issue.

Trés bon!

DIS-LE is one of the great success stories of the Acorn PD scene. In the last few years this foreign language tutor program has sold incredibly well. Shareware programs have always been rather hit and miss in terms of their commercial success, but *Dis-le* is certainly one of the winners. Author Mike Smith has recently updated the program to an incredibly professional five disc package, *Dis-le* version 3.

The secret of Mike's success with *Dis-le* is due mainly to the implementation of an incredibly useful program idea, but also partly to a chance meeting with myself at an Acorn show several years ago. At the annual PD meet, Mike handed me a copy of *Dis-le* assuming (perfectly correctly) that I was just 'some flunky with a computer'. What Mike didn't know at the time was that I also wrote for *Acorn User*. After a near full page review several years ago, the program really took off and users registered in their hundreds.

Mike has strong views on software piracy, but sees shareware as a method of utilising the problem: 'I look at shareware like throwing a stone in the water and the ripples go in all directions – it really has a multiple effect. I would rather be honest and sell the software as commercial, but with the amount of piracy I might as well give it away as PD. So I figure the ones that 'steal it', as it were, might as well help me distribute it.'

For those of you who've never encountered *Dis-le*, the program utilises sampled speech to teach French words to the user. Mike has comprehensively sampled French speaker Jean-François saying over 2300 words. These are played back by *Dis-le* as part of the tutorial questions. *Dis-le* runs in the desktop and offers several types of questions and games that tax your knowledge of the French language.

As an example, the multiple choice section presents the user with a French word which is 'spoken' by the computer by playing back a sample of Jean-François. The user must select the correct matching English word from the list, and getting the answer wrong produces one of a wide variety of spoken negative responses. Being told 'Non!' or 'Faux' when you hit the wrong word, or 'Superb', 'Bon!' or 'Correct' when you get it right, really gets you into the right mood.

My main complaint about the original program was that the dictionary was very limited, but this has been addressed by Mike in version 3. Six megabytes of samples are now present on the five installation discs (a hard disc is essential), and the vocabulary matches the GCSE topic-based standard. For a shareware program, *Dis-le* comes in a very professional video box with accompanying literature.

I do have one or two minor niggles about the program itself. Occasionally, the gap between the response to a question and the speech for the next question is non-existent which can be a little confusing. The quality of the samples is also not very good. It's obviously important to get a good sized vocabulary, and this does necessitate the use of low frequency samples. Perhaps version four of the program will be CD based.

I'd also like to see more tests and sets of questions that use the same vocabulary base, and timed tests would be beneficial – it's much more fun working against the clock. My only other quibble is the new registration price – it's a little steep at £30 but still well worth the money, given the quality of the program.

After the massive success of *Dis-le* on the Acorn platform, Mike is currently working to convert the application to the PC and Mac, and also has Acorn versions in German and Spanish on the way.

Dis-le is a classic case of Shareware that really works properly. The author has benefited well because a lot of people have registered for the software. The users also benefit because the author keeps improving the product and releasing new versions – this is because the large number of registrations makes it worth his while. Good luck to Mike with this new version of *Dis-le*.

Dis-le is shareware and can be obtained from Mike Smith at: 26 Grenville Road, Saint Judes, Plymouth PL4 9PY, or by e-mail to: mike@msmith.zynet.co.uk. Alternatively, an unregistered version is available from Five Star Marketing.



Four day wonder

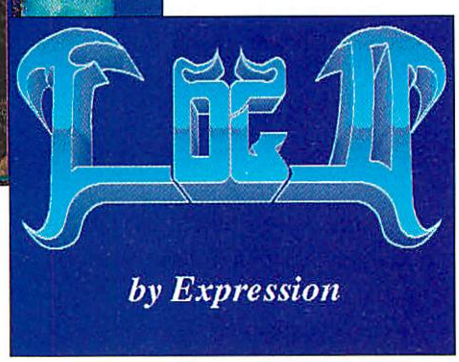
THE new coding group Expression, who I introduced back in the April issue, has just released *Logo*, its first PD game. Head Expression man, Christian, is quick to point out that the game was put together in only four days, but no excuses are needed. It's a great little game.

The idea of the game is to reverse patterns of blocks on the screen by clicking on them in order to clear the level. All blocks adjacent to the one you click on are reversed, so you've got to think ahead and plan the right order to switch the blocks. The only problem is the tight time limit you're working against. The first few levels lead you gently into the gameplay, but just as you're beginning to think it's going to be easy to complete all 40 levels, it becomes a little more complicated and you suddenly find yourself out of time.

From the gameplay point of view, it's very addictive and will be a definite winner for all the puzzle fans out there. In terms of appearance, you can tell the game has been put together by a demo crew. Presentation is to the fore, with a nice intro and wall-to-wall graphics throughout, which does a lot to improve the feel of the game – therefore it comes highly recommended. *Logo* is on disc GA76 from Five Star Marketing.

The latest word on Expression's next project is a possible racing game in the Micro Machines mould. Watch this space...





Software requests

THANKS for the great response to my last software requests feature. I think I've had at least one suggestion or contribution for every recent request, not to mention an array of program solutions for the backdrop program. We'll be featuring these programs on the cover disc soon.

Following a previous response for Draw to Meta file conversion, a whole array of conversion utilities can be found on APDL's Careware disk 19. The disc includes tools to port graphics between Draw and WMF, DXF, CGM and EPS, and costs £5 (£4 goes to charity). This is well worth the price for all concerned, and thanks to Roy Burgin for pointing us in the right direction.

In the meantime, we need more requests, so if you have a particular problem on your desktop and have no idea how to code it up, please e-mail or write to me at the address below.

To keep the ball rolling, I could really use a program that converts 24-bit sprite files to 256 colour sprites with specially chosen palettes. The program would include controls to tailor the selection of the palette and provide error diffusion and dithering options.

I'll also repeat one of my original requests for a filer patch that changes the standard RISC OS copy window to a percentage complete bar that reveals how far through a copy operation you are. Currently, the status reveals how many files and how many bytes to go on the current file have been copied. A much better solution would be to add up the sizes of all the files being copied and tell you how long there is to go.

Another request comes from Theo Markettos who'd like a module that sends files to the printer in the background. The module should continue working at all times so you can, for instance, exit the desktop to the command line without a printer stoppage.

Recommended PD Libraries

The Datafile, 71 Anson Road, Locking, Weston-Super-Mare BS24 7DQ

Naked PD, 'Fayence', Fulford Road, Stoke-on-Trent, Staffs ST11 9QT

Arch Angel PD, PO Box 41, Exeter EX4 3EN

APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN

Five Star Marketing, 4 Shepherds Walk, Bushey, Hertfordshire WD2 1LZ

Beebware PD, 83 Forrest Road, Huncote, Leicester LE9 3BH

ARM Club PD Library, Freepost ND6573, London N12 0BR

Stop press software requests

Last minute software requests include an appeal for Quicktime and .AVI movie players, and a request for a patch that improves the music in Flashback. Nathan Atkinson wants a hack that uses a more accurate music player (like *Acorn User*'s QTM) to play the original Protracker music from the Amiga during the game. If anyone knows of software that fits the bill, please get in touch at the usual address.

GNU C

The latest version of the GNU C++ compiler, GCC, has now been released and is available on the HENSA ftp site on the Net. Also needed is the UNIXLIB3.7a file which is on the demon ftp server. As usual, addresses of all the best Internet ftp sites are listed on the PD section of the *Acorn User* Web site.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP. Or preferably, by e-mail to aupdeditor@idg.co.uk.

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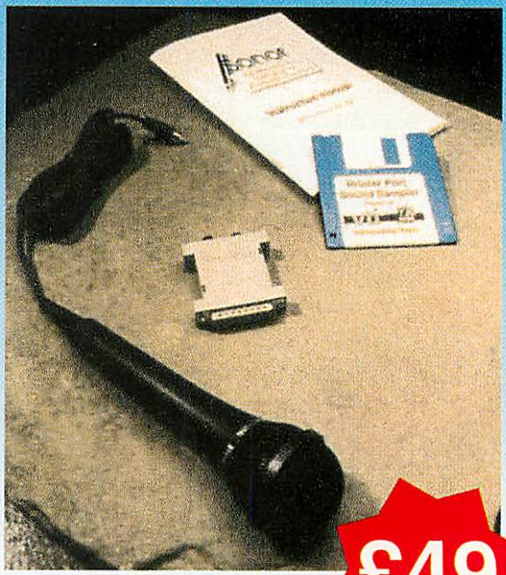


This product is an ideal tool for use in education, as it can be used in a classroom environment with interaction from the pupils. Its features cover many sections in the National Curriculum.

£99 +VAT

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- Ideal for multimedia creations on the Acorn



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"The VTi sampler is really the better package..." - Acorn User, April 95
"...Sonor is a far more useful tool." - Archimedes World, March 95

£49 +VAT

Formerly known as the Printer Port Sampler

These products, as well as ArcFS 2 and Voyager/Argo, are available from

vti

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Tel:01243 531194 Fax: 01243 531196 email: vti@argonet.co.uk

Comms

Mossoft BBS rolls on

MIKE MOSTOWYJ claims that his Mossoft BBS is the only Archimedes-based BBS in the Peterborough area, but it may not hold that position for much longer – I'll tell you why in a moment. Since Mike started Mossoft BBS in the Autumn of 1995 it has been quietly and steadily growing, gaining users and reputation.

Mossoft BBS runs ArmBBS software on an A5000 with one 520Mb hard disc drive and one 80Mb unit. Mike has a 14400 bps Sportster modem on a dedicated line supplied by Bell Cablemedia, but on hearing that many A5000 owners have had good results at higher speeds than the recommended 19200bps maximum, he may soon upgrade to the V34 model.

Since November 1995 over 2000 calls have been received by the BBS, which at the time of writing has 164 users. Surprisingly, only a few of these users are a local call away from Mossoft BBS, and Mike has been pleased to have received calls from France and Germany.

Mike told me that one of the most pleasing aspects of the Acorn-using community is that they're always willing to help and advise others. When he first thought of starting the BBS, he posted a message in the demon.ip.support. archimedes Usenet newsgroup asking for advice on running a BBS and suggestions for suitable software.

Back came replies and suggestions from Acorn users. One was from John Stonier of the Digital Databank who suggested Mike contact Keith Hall, the author of ArmBBS and, since installing it, Mossoft BBS has never looked back. Mike doesn't let running the BBS completely monopolise the machine though, which he also uses for occasional word processing.

Mike modestly explains away his own 120000-odd score in the popular ARMsRace sysop-of-a-BBS simulation game, which is one of several Mossoft on-line attractions. Others include free Internet e-mail facilities for users via his Demon Internet account, a vast collection of JPEG amateur and professional photos and a file area for the output of Freeware software writers' group *ARM'd and Dangerous*.

A regular caller to Mossoft BBS is Matthew Page who will soon be moving to back the Peterborough area, bringing his ARMpit (UK) BBS with him, thus breaking the Mossoft monopoly. However, Mike and Matthew plan to build up some inter-BBS activities that will enhance both systems. You can join in the fun now by calling the 24 hour number for Mossoft BBS.

Mossoft BBS
(01733) 701501



Mike's Mossoft Monopoly

Read online about an off-line reader

The Comms page URL of the month points to the Home Page of the *OLRead* Message Reader. *OLRead* is a Freeware *ArcBBS* off-line message reader for Acorn computers, written by Alex Hayward. If you're dialling a bulletin board when the phone charge rates are high, you can save time and money by quickly downloading all the new messages waiting for you and then logging off.

The saved file of messages can be loaded into an off-line message reader or OLR on your own computer, allowing you to read and reply to the messages at leisure in your own time. You can usually upload these replies on another short call to the BBS to complete the process.

BBSs running *ARCbbs* or *ArmBBS* software share a similar format for these downloaded message files and *OLRead* is designed to make reading, replying and writing new messages as simple as possible. The *OLRead* window displays each message and its header information of writer and subject, and provides a set of button icons to allow you to move up and down the message file, reading them in sequence or by choosing from a summary list opened from its toolbar. The toolbar is also used to open an editor window to type in your reply, and OLRead lets you quote all or sections of the original message to clarify your comments. The program allows saving replies to an 'Uploads' directory, extracting individual messages, listing, browsing and many other useful facilities, including the re-editing of replies, which is often necessary in the light of later-read messages. *OLRead* requires either *!Zap* or *!StrongEd* for you to write replies.

Alex is continuously developing the program and the Shareware version called *OLReadS* has even more features, such as archiving and thread-following. A thread is the subject or idea being discussed by the various writers taking part in the message area, so the off-line reader (OLR) will jump from message to message on the same thread rather than showing all the messages in strict chronological order.

You can obtain *!Zap* and *!StrongEd* from many BBSs and *!OLRead* from Arcade BBS or directly from the *OLRead* Home Page URL: at *http://www.u-net.com/~hayward/OLRead.html*

Tiggers do like Haycorns!

Richard Stagg is co-sysop with Simon Inns of TiggerBBS based in Slough. The BBS has thriving Acorn interest areas (which Richard is in charge of) although it is run on a 486DX2/66 PC using the *rocat Bulletin Board Host* for *Linux*. Specialising in DTP, clipart and fonts, other areas of interest include *Linux*, MSDOS, *Windows* and large GIF and JPEG image collections, as well as free Internet e-mail. TiggerBBS is online 24 hours and speeds to V34 are supported.

TiggerBBS
(01753) 672520

Norfolk dreams

Edd Deegan says his BBS called Dreamworld E.I.E in Southrepps is probably unique in running ArmBBS on an A3010, and offers hundreds of Megabytes of files to download.

Dreamworld supports connections to 28,800 bps but has restricted times and uses the 'ringback' method to share a voice line. Dial the number between 8pm and 7.30am weekdays or on weekend mornings and let it ring once or twice then hang up. Call again immediately, and the modem and BBS will answer.

Dreamworld E.I.E
(01263) 833395

Worthing on the Web

CJE Micros, a new 'Acorn Centre of Technology' in Worthing, Sussex has its own WWW pages giving up-to-date information and prices on products and special offers. Browse to http://www.art.acorn.co.uk/coft/CJE/ for more information or e-mail cjemicro@pavilion.co.uk. Product information from its sister company CJE Software Distribution can be found at http://www.art.acorn.co.uk/SALES/THIRDPARTY/softindex.html.

CJE Micros
(01903) 523666

Contacting me

Send me any Acorn-interest URLs you find and I'll publish a selection. You can contact me by writing to David Dade, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181-654 2212.

Networks

The Global Village gets smaller

This month, a change from AUN and a look at a link-up of a different kind

MANY digital mobile phones can send and receive short text messages of no more than 160 characters. Different services may have different tariffs, but SMS (Short Message Service) is usually subscription free, although there is a small charge each time you actually send a message.

The system effectively turns your mobile phone into a two-way pager. It is particularly useful if you want to get a message to someone, but you don't want to disturb them with a voice call. It's also handy for sending information which can get confused if given as a voice message. I've used it to send my e-mail address, for example.

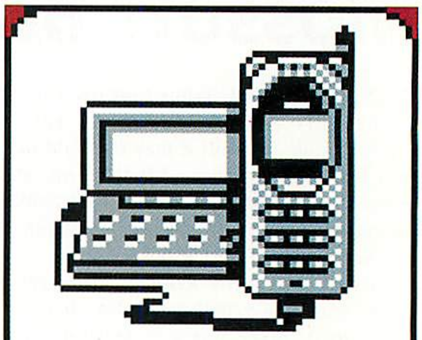
Sending messages

SMS is part of the Global System for Mobile Communications (GSM) standard and has been implemented by several companies, and not always in the way it was originally intended. Orange, for example, use it to re-program their customers' phones.

Without any additional hardware or software, owners of a GSM phone can send text messages. Entering text on the Nokia 2110 telephone is relatively easy, although quite slow, especially at first. For those wishing to try it, press **Menu 2 3** and you'll get a flashing cursor at the top left of the display. The display will also show that the keys will now enter letters, not numbers (alpha mode).

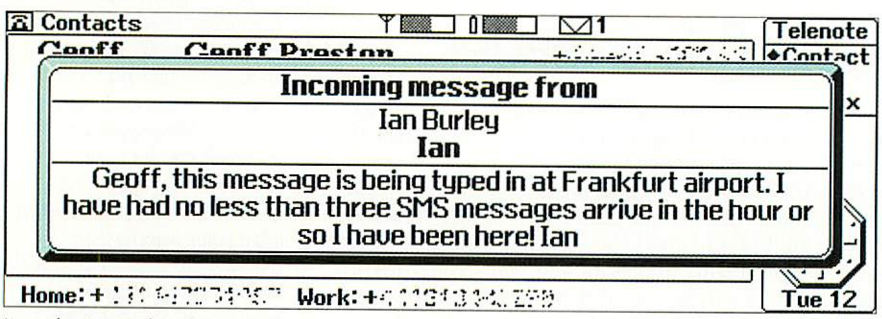
The numeric keys have letters on them, and successive key presses will cycle through the letters on that particular key. For example, the letter 'K' is on the '5' key. In alpha mode, press key '5' once to get a 'J' and a second time for the 'K'. For double letters, or consecutive letters from the same key, you must enter the first of the pair and then wait for a second while the phone realises you want another character from the same key. Typing in a 160 character message this way could take over 250 key presses. When entered, press 'Option' and select 'Save' followed by 'OK'.

Next you will need to enter the message centre number which is +44385016005 (entered exactly as shown). Press 'OK', enter the number of the recipient and press 'Send'. In a short while the display will confirm that the message has been sent. Even if the recipient's phone is switched off, the message will remain in the system for a pre-determined period of time, or until the phone has been switched on. The envelope icon on the display of the recipient's phone will flash, and the message can be read.



A new addition to the Pocket Book II

Psion and Nokia have recognised the need for a more practical method of inputting text and have developed *Telenote* which will enable the Psion 3a (and Acorn Pocket Book II) to send messages through a digital phone to another digital phone. *Telenote* costs about £70 and for that you get an intelligent connection cable, the Pocket Book II software on a solid state disc and a PC program which will enable desktop computer users to send SMS text to digital phones.



It works. Ian Burley chose not to explore the sights at Frankfurt Airport, but sent me this greeting instead

Installation and set up

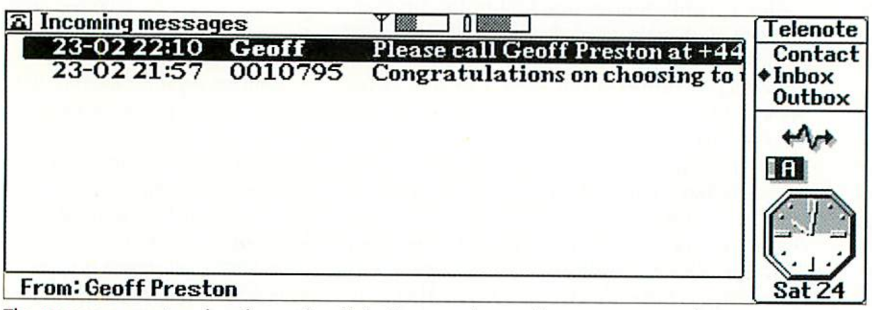
Installation is straightforward. Plug in the *Telenote* solid state disc into either slot in your Pocket Book II, move to the system screen, position the highlight to the right of where you want the *Telenote* icon to appear and select 'Install' from the 'Apps' menu. Ensure the Pocket Book II 'Remote Link' option is set to 'Off'. When the phone has been successfully connected to the Pocket Book, the phone's signal strength and battery level will be displayed at the top of the screen.

When starting for the first time, you should enter your own personal details into the contact database. After finishing this part, you'll be presented with a registration screen which is worth completing because it will be sent via the phone and a message will be returned shortly. If nothing else, it proves that the system is working.

Using Telenote

There are four elements or 'views' to the *Telenote* software. The **Contact View** lets you store details of regular contacts including mobile, home and work numbers. If you have already built up a file of contacts in the Pocket Book, this can be transferred into *Telenote*'s database.

The **Outbox View** is where the user composes a message. First choose a name from the database and after pressing enter, begin typing the message. Hitting Tab will then send it. A beep and a warning



The messages are stored as they arrive. Note the reception and battery status at the top

message will tell you if you've gone over the 160 character limit. There are several clever features included in this view, for example it's possible to set a time and a date before which the message cannot be sent. You can also set the validity period after which the message will be discarded from the network if it has not been delivered and you can send the same message to several users.

The **Inbox View** is where you read your incoming messages. These can be read at any time and deleted if and when the user chooses. Messages can be forwarded to another user or replied to. The original text can be included in your reply, but with messages no greater than 160 characters, the original message would have to have been very short to begin with!

The **Smart Messages View** can save you a great deal of time by automating the process of sending common messages like 'Please call me on...','The train is late...','The meeting is cancelled....' and so on. Each smart message has a short name and can be easily identified by one of a number of icons supplied.

Customising Telenote

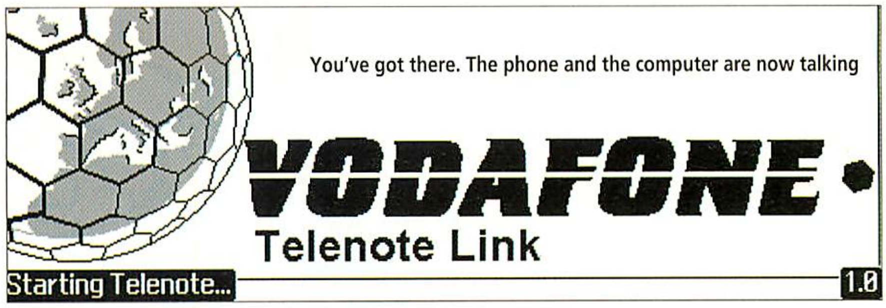
As with all good Pocket Book software, *Telenote* has a range of preferences including Date and Time format, pop-up incoming messages flag and the message alarm sound.

Pagemail

Also supplied with *Telenote* is *Pagemail*: a Windows application for use with a desktop or laptop PC. *Pagemail* runs very nicely on an 8Mb Risc PC with PC card, but you will need to connect a modem. If you intend buying a modem just for SMS, you won't need a very fast one because you're not shifting a great deal of data. I used a Pace Microlin 2400 Baud modem, but the software can be set up for several types. As can be seen from the screenshot, text is entered in the top left window.

The number at the bottom of that window is the character count, taking into account the ending of the text message which will be automatically added at the end of the message. Clicking on 'Send' will prompt you for the phone number of the recipient. On the top right is a menu button for selecting the logs of sent and received messages, rejected messages, the address book to save you typing in the same number over and over again, and a bank of standard messages which the user develops.

Each message will have a title (which is listed in the bottom right window), and the actual message which can be moved into the message window. The only option that needs to be inserted after installing *Pagemail* is the number of the message centre and the signing off phrase.



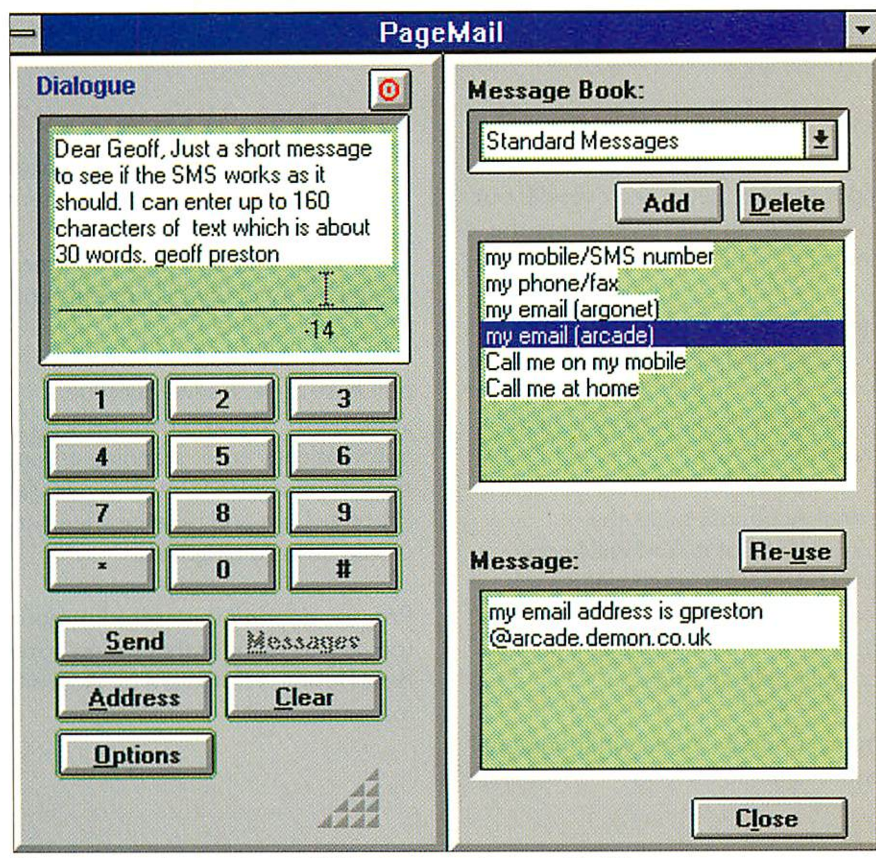
You've got there. The phone and the computer are now talking

Conclusion

Before rushing off to buy a *Telenote*, there are a few restrictions, although several current developments are expected to overcome most. Firstly, you'll need to be connected to the Vodafone digital (not analogue) phone service. Talks are being conducted with other digital phone companies but, at present, only Vodafone can support *Telenote*.

Secondly, you'll need the correct phone. *Telenote* will only work with the Nokia 2110 (and 2110i) and the Philips PR747. It will also work with the Orange Nokia phone, although that is not yet official. The new Nokia 1610 phone is technically capable of being linked and is likely to be next on the list. New *Telenote* packs will follow for other manufacturer's phones. *Telenote* requires at least 256K of free memory in your Pocket Book II, and ideally 300K which can be either on the internal drive or an SSD. Finally, *Telenote* will not run on a Pocket Book I.

If you want to try sending an SMS message, you may first e-mail me and if I'm satisfied you're legitimate, I'll send my SMS number.



This program enables you to send SMS test messages from your Risc PC

Contacting me

You can contact the Network page by writing to me, Geoff Preston at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: aueduc@idg.co.uk

Acorn User CD-ROM 2

First of all, some of you may be wondering why we're calling this the second *Acorn User* CD-ROM, when it's actually the third one that's been on the cover. It's quite simple. Our second cover CD was sponsored by Acorn itself so it wasn't really *ours*, but this one is, so it's number two.

We've designed this CD-ROM with the connecting glue of HTML pages, the same type of system used on the World Wide Web part of the Internet. This has two consequences: Firstly, if you've never experienced what it's like on the Web this will give you a taster (although it's a bit quicker than most Web accesses), and secondly, it's readable by all common computer platforms, not just Acorn machines, partly as an experiment and partly as a way of demonstrating, on other machines, what your RISC OS machine is capable of.

To achieve this we had to use the PC file-naming conventions – eight-character filenames plus three character extension for the file type. To allow Acorn applications and demos to be available as well they have all been packed away in archives — accessible either by ArcFS or SparkPlug.

The next section shows you how you can get started if you don't have a Web browsing application to hand, and even if you do you will probably need to run the CD_Fix application as well.

How to get started

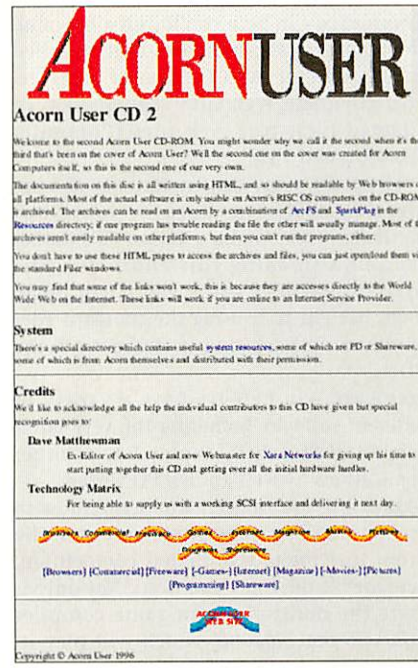
Acorn's CDFS software is not entirely without problems. The main one is that it doesn't convert PC-format file extensions (such as .TXT and .JPG) to the correct Acorn file types so that the icons display properly and the correct application is launched when a file icon is double-clicked.

On the *floppy* disc you'll find the CD_Fix application which you should run before you try accessing the CD on a RISC OS machine. CD_Fix has been written by *Warm Silence Software* and is primarily used to provide the correct file types for MovieFS – however the file type list has been extended to include others that appear on the AUCD2. You'll find that it's a good idea to include CD_Fix in your boot sequence.

If you have a Web browser you can start as soon as you've run CD_Fix – just double-click on the *INDEX/HTM* file at the top level of the CD-ROM. If you don't have a Web browser you'll need to do a bit more first.

On the CD-ROM in the *BROWSERS* directory you'll find several archived PD Web browsers: ArcWeb, Webite and Webster. ArcWeb is a very comprehensive piece of software while Webite is a PD version of the Doggysoft software. Some of these work better than others – you can experiment.

As the browsers are held in archives


ACORNUSER

Acorn User CD 2

Welcome to the second Acorn User CD-ROM. You might wonder why we call it the second when it's the third that's been on the cover of Acorn User? Well the second one on the cover was created for Acorn Computers itself, so this is the second one of our very own.

The documentation on this disc is all written using HTML, and so should be readable by Web browsers on all platforms. Most of the actual software is only usable on Acorn's RISC OS computers on the CD-ROM is archived. The archives can be read on an Acorn by a combination of ArcFS and SparkPlug in the Resources directory; if one program has trouble reading the file the other will usually manage. Most of the archives aren't easily readable on other platforms, but then you can't run the programs, either.

You don't have to use these HTML pages to access the archives and files, you can just open/load them via the standard Filer windows.

You may find that some of the links won't work, this is because they are accesses directly to the World Wide Web on the Internet. These links will work if you are online to an Internet Service Provider.

System

There's a special directory which contains useful system resources, some of which are PD or Shareware, some of which is from Acorn themselves and distributed with their permission.

Credits

We'd like to acknowledge all the help the individual contributors to this CD have given but special recognition goes to:

Dave Matthewman
Ex-Editor of Acorn User and now Webmaster for Xara Networks for giving up his time to start putting together this CD and getting over all the initial hardware hurdles.

Technology Matrix
For being able to supply us with a working SCSI interface and delivering it next day.

[Browsers] [Commercial] [Freeware] [-Games-] [Internet] [Magazine] [-Movies-] [Pictures] [Programming] [Shareware]

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they need to be extracted – you can use ArcFS which is on the cover disc to do this. This will only work on RISC OS machines, of course, but as the software won't run on other machines it doesn't matter.

Once you've got one of the browsers running just double-click on *INDEX/HTM* in the top-level directory of the CD-ROM to begin.

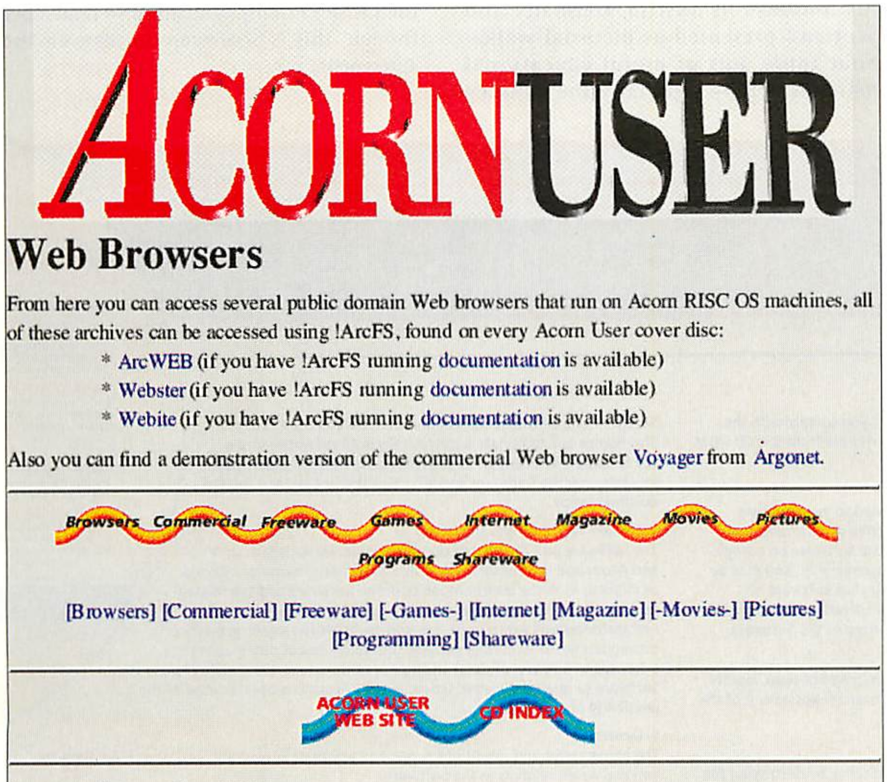
To deal with any movies, you'll also find a special demo version of MovieFS which works with Acorn Replay to allow it to run alien movie formats such as FLI and AVI, and it will also play back sound files such as WAV. MovieFS requires you to have ARMovie on your machine.

Using a browser

If you're not familiar with how a browser works you can check out David Matthewman's new series on creating HTML pages for some guidelines. Basically though, read the page as you wish and any highlighted text — and some pictures — provide links to other pages.

For example, on the main index page (the CD Home page) there is a set of icons along the bottom. You can click on one of these to go to the appropriate section, or you can click on the text equivalents below.

Some links have been provided which access pages which are not on the CD. These are on the World Wide Web and you would have to be connected to the Internet for these links to work. For example, there's a reference to the *Acorn User* Online home page. Clicking on these links will do no harm, they will just generate an error message.


ACORNUSER

Web Browsers

From here you can access several public domain Web browsers that run on Acorn RISC OS machines, all of these archives can be accessed using !ArcFS, found on every Acorn User cover disc:

* ArcWEB (if you have !ArcFS running documentation is available)
* Webster (if you have !ArcFS running documentation is available)
* Webite (if you have !ArcFS running documentation is available)

Also you can find a demonstration version of the commercial Web browser Voyager from Argonet.

Browsers Commercial Freeware Games Internet Magazine Movies Pictures Programs Shareware

[Browsers] [Commercial] [Freeware] [-Games-] [Internet] [Magazine] [-Movies-] [Pictures] [Programming] [Shareware]

ACORN USER WEB SITE CD INDEX

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Cover disc

Contents

Here's a description of the sort of things you can expect to find in the various sections of the CD-ROM:

Commerce – in here you'll find a list of all the commercial companies that supplied information for this CD. Some of them created complete Web sites (Topologika) or adapted their real Web sites (Computer Concepts and VTi).

There are many demonstrations of commercial software here – look out particularly for Anglia's Nelson CD. Rather than downloading this enormous file, requiring 40Mb of space, you might prefer to go straight to it using the standard Filer windows and copying it straight off the CD.

Freeware – in here we have a variety of different software including the very latest version of StrongHELP plus lots of other applications by well-known PD writers.

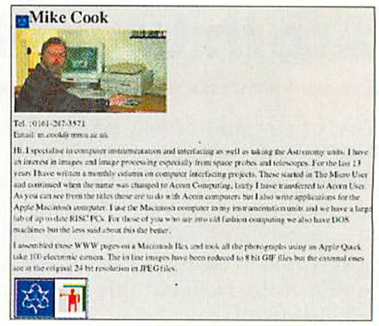
Games – if you've been wondering how to create an adventure game to enter the *Acorn User* interactive fiction competition, here are all the tools you need. Not only is there the multi-platform game compiler *Inform 6* but *Zip2000*, which will play it. Plus we've supplied six adventure games that you can play – note that for conformity with the rest of the CD we have given these files a PC file extension of ZZZ which CD_Fix translates into the correct RISC OS file type.

Not only that, we also have *GTAC*, the graphic text adventure creator, and *Angband* which is a great swords and sorcery-style text-graphics dungeon game – simple but compulsive.

Plus there's a whole set of SimCity 2000 advice and game cheat pages.

Internet – there are two classes of software in this section, those packages for beginners and the ones for the more advanced. For beginners the main attraction is the *Acornet* package which contains the entire suite of PD software needed for connection to the Internet — although you'll need a modem and an Internet Software Provider as well. For the advanced are packages like the HTTPServer software by Stewart Brodie.





Magazine – here's a small chunk of the *Acorn User* Online Web site, plus all the cover discs from last April to last month.

Movies – this section contains a wide selection of movies and sounds in a variety of formats, and all except the MPEG files will run from Acorn Replay modified by MovieFS. You'll need MPEGfast to play the MPEG files which is referenced from the index page.

The files have been sourced from IDG Media's PC magazines and also from the Internet itself – there's quite an extensive collection of scientific and other movies available, though they can take a very long time to download.

Due to the nature of MPEG and the current state of MPEGfast, not all the frames will play, but the *Canyon* movie is very effective, though a bit fast on the Risc PC.

Pictures – there are two collections of pictures here. The smaller of the two is from David Cooper and his American holidays – family portraits omitted.

Mike Cook has provided us with an enormous number of pictures. There are his holidays in Austria, Germany and Scotland presented as pictorial walkabout tours, lots of useful educational material here — especially the whiskey distillery. In addition, he's provided huge numbers of pictures from NASA's 1960's space projects, Gemini and Apollo, with a selection of Mercury and Earth images.

Not only that but he's presented a cut-down version of the Manchester Metropolitan University Maths and Physics dept pages, and information about a new degree available there. While interesting these show how HTML and the Web can be used to inform readers.

Both David and Mike are happy to let their holiday snaps be used for any purpose except commercial activity.

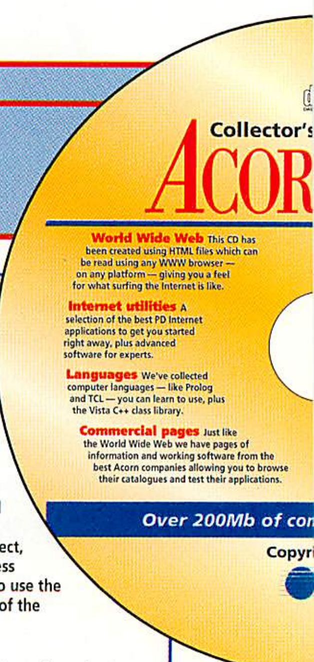
Programming – in here we have the Prolog programming language, the TCL scripting language and the Vista C++ class library.

Resources – the Acorn resources in this directory are subject to the licence agreement shown in the panel. In addition there's a copy of ArcFS stored in a Spark archive and a copy of SparkPlug in an ArcFS file.

Shareware – in this section are a wide variety of applications including the very latest version of StrongEd (version 4) and the *Lobster Fishing* simulation — remember though, this is Shareware so consult the agreement.

Regular items

- Mike Cook's Mac icon grabber
- *INFO contains a plethora of demos, utilities and applications to keep you busy
- Wimp C with the special library of routines for creating applications



Acorn Licence Agreement

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5. General
The above terms and conditions supersede any prior agreement, oral or written, between you and Acorn relating to the Software.

The Cover Disc

Mark Johnson

Tank Attack

Tank Attack is a multi-player game for two or three players. Each player competes against the other/s, trying to win as many levels as possible, with the aim of the game being to simply blow up your challenger/s.

Each player starts with 99 units of fire power and 99 units of energy. Every time you fire you lose 10 units of fire power, and if you are hit, you lose 7 units of energy. Your fire power is continually replenished one unit at a time, from the radiation from the surrounding area – or something like that.



Bonuses appear from time to time, and when collected have various effects. You'll have to work out what these do, though – no bonuses kill you, or reduce your energy.

You can load different levels by either dragging the file on to the Tank Attack icon on the icon bar, or double-clicking it. This will load a different set of levels for you to play. Options remain unaltered, so adjust the options to your liking before playing the new levels.

Game Keys

The keys for the three players are as follows:

Player 1 (Red)		Up	"
Left	Left Shift	Down	?
Right	Z	Fire	Return
Up	D		
Down	X	Player 3 (Purple)	
Fire	F	Left	Keypad 1
		Right	Keypad 2
Player 2 (Blue)		Up	Keypad 9
Left	<	Down	Keypad 6
Right	>	Fire	Keypad -

If you own a Risc PC this game will run rather fast without Game on installed, published by the ARM club.

Acorn User Index

Paul Burns

This application is designed to allow you to easily locate articles that have appeared in *Acorn User* over the past few years.

To load !AUIndex double-click on its icon in the directory display. When it is loaded, clicking with Select or adjust on its icon bar icon will bring up the main window. Clicking menu on the icon will bring up the usual Info and Quit options.

At the top of the window are two radio icons which show whether the entire index or just the results of the last search are being displayed. Clicking on these icons will switch between the two modes. Below these are the current article number and the total number of articles listed, in the current mode.

In the Centre section of window are the details of the current article. This shows the topic and a description of the current article, along with details of the month, year, issue and page numbers.

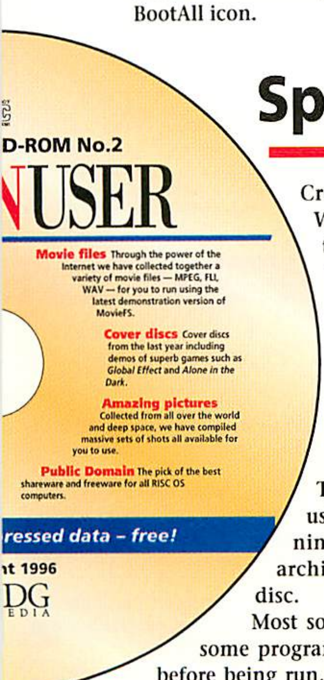
BootAll

PD Scheme

Henry Morgan

BootAll filer_boots all the applications within the directory that is dragged to the BootAll icon.

Just double-click the !BootAll icon, and the icon will now appear on the iconbar. Drag to this any directory, and all the applications in the directory will be run.



SpriteShifter

Mike Dickens

Creating background bitmaps for backdrops or Web pages can be awkward because when tiled the edges of the bitmap end tend to show up. This program rearranges the sprites in a sprite file so that these artifices may be edited away.

Suppose you have a tiled background. If you look at the sprite when the edges are down the middle it is just the original with the corners swapped.

That's it. Simply fire up !SprShift, drag a sprite file onto its icon and save it where you will. It probably isn't necessary but if you want the original image back run it through again.

Disc information

The software on this disc has been compressed using *ArcFS 2* from VTi, and is opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on the disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 2.204 from Pineapple Software.

Kimberley

Kimberley Computers Ltd.
Dept ACU9, 73 Chapel Street, Leigh, Lancashire, WN7 2DA UK.

Tel +44 (01942) 677777
Fax +44 (01942) 672300

Email Sales@kcsprem.demon.co.uk

6x CD ROM Players

Suitable for Risc PC 600/700/A7000



Enhance your computer by adding a Super Fast 6 Speed CD ROM.

No extra hardware required, simply fits on to the existing IDE interface in your computer. Takes 10 minutes to install, all drivers and leads supplied.

Supports CD-I, Mpeg, Kodak, etc 900Kb/Sec <190Msec, 256Kb Cache, Quick Play Button, Multi Session.

CD ROM 6x £75.00 d £88.13

170Mb 2.5" Hard Drives

Suitable for A3000/A3010/A3020/A4/IBM Portables



Enhance your computer by adding a Fast 170Mb Hard Drive.

Allows the Acorn to run faster. Stores the equivalent of 217 full 800k Diskettes. Easy to fit, Instructions, Screws & Cable provided. Should take no more than 10 minutes. Requires Risc OS v3 or above.

Note: A3010/A3000 also require an IDE Interface

170Mb 2.5" IDE £89.00 d £104.58

RPC Upgrades

	Ex Vat	Inc Vat	
1Mb Vram	£35.00	£41.13	b
2Mb Vram	£85.00	£99.87	b
4Mb 72 Pin Simm	£50.00	£58.75	c
8Mb 72 Pin Simm	£99.00	£116.33	c
16Mb 72 Pin Simm	£160.00	£188.00	c
32Mb 72 Pin Simm	£ Call	£ Call	c
540Mb IDE Hard Drive	£125.00	£146.87	d
850Mb IDE Hard Drive	£139.00	£163.32	d
1Gb IDE Hard Drive	£159.00	£186.82	d
1.2Gb IDE Hard Drive	£169.00	£198.58	d
1.6Gb IDE Hard Drive	£215.00	£252.62	d
2Gb IDE Hard Drive	£285.00	£334.87	e
540Mb SCSI Hard Drive	£135.00	£158.63	d
1Gb SCSI Hard Drive	£189.00	£222.07	e
2Gb SCSI Hard Drive	£545.00	£640.37	f
4Gb SCSI Hard Drive	£680.00	£799.00	f
PC Card SXL-33	£199.00	£233.82	e
PC Card DX2-66	£249.00	£292.57	e
PC Card DX4-100	£299.00	£351.32	e
PC Card 586-100	£499.00	£586.32	e
CPU FAN COOLER	£8.50	£9.99	b

Did You Know that the chances of your ARM processor failing are much higher if you have a PC Card fitted. The PC Card raises the operting temprature of the ARM Card, to combat this, you will need a PC CPU Cooler. **Highly Recommended**

Hex (6x) CD Rom IDE	£75.00	£88.12	e
Oct (8x) CD Rom IDE	£115.00	£135.12	e
Quad (4x) CD Rom SCSI	£75.00	£88.12	e
Oct (8x) CD Rom SCSI	£185.00	£217.37	e
Arm 710 Upgrade	£125.00	£146.87	e
2nd Slice (inc PSU)	£99.00	£116.33	e
2 Slot Backplane	£30.00	£35.25	b
16 Bit Sound Upgrade	£59.00	£69.32	c
MIDI Port Podule	£45.00	£52.87	c
User Port Analogue/MIDI	£99.00	£116.33	c
AKA32 Acorn SCSI Card	£125.00	£146.87	c
Std SCSI Card	£99.00	£116.33	c
Ethernet Card	£110.00	£129.25	c
Ethernet Card & Access+	£122.00	£143.35	c
RPC Technical Ref Man.	£50.00	£58.75	e
Heavy Duty Keyboard	£25.00	£29.37	e
RPC Std Keyboard	£25.00	£29.37	e
Keyboard Ext. Cable 2M	£6.50	£7.64	b
KCS Replacement Mouse	£10.00	£11.75	b
Acorn Mouse	£20.00	£23.50	b
Mouse Ext. Cable 2M	£6.50	£7.64	b
Monitor Ext. Cable 2M	£6.50	£7.64	b
14.4k Ext. Fax/Modem	£79.00	£92.82	e
28.8k Ext. Fax/Modem	£145.00	£170.37	e
14.4k Fax/Modem BABT	£99.00	£116.33	e
28.8k Fax/Modem BABT	£185.00	£217.37	e
15" FST Monitor 0.28dp	£225.00	£264.37	f
17" Monitor 0.28dp	£480.00	£564.00	f
17" Monitor 0.26dp	£535.00	£628.62	f
21" Monitor 0.26dp	£ Call	£ Call	f

A5000 Upgrades

	Ex Vat	Inc Vat	
2-4Mb Mem Upgrade	£89.00	£104.57	b
4-8Mb Mem Upgrade	£229.00	£269.07	d
540Mb IDE Hard Drive	£125.00	£146.87	d
540Mb SCSI Hard Drive	£135.00	£158.63	d
1Gb SCSI Hard Drive	£189.00	£222.07	e
2Gb SCSI Hard Drive	£545.00	£640.38	f
4Gb SCSI Hard Drive	£680.00	£799.00	f
All CD Roms are External			
Twin (2x) CD Rom Par.	£175.00	£205.63	e
Quad (4x) CD Rom SCSI	£175.00	£205.63	e
Oct (8x) CD Rom SCSI	£245.00	£287.87	e
14.4k Ext. Fax/Modem	£79.00	£92.83	e
28.8k Ext. Fax/Modem	£145.00	£170.37	e
14.4k Fax/Modem BABT	£99.00	£116.33	e
28.8k Fax/Modem BABT	£185.00	£217.37	e
Keyboard Ext. Cable 2M	£6.50	£7.64	b
KCS Replacement Mouse	£10.00	£11.75	b
Acorn Mouse	£20.00	£23.50	b
Mouse Ext. Cable 2M	£6.50	£7.64	b
Monitor Ext. Cable 2M	£6.50	£7.64	b
Risc OS 3.1 Chipset	£29.00	£34.07	b
Risc OS 3.1 Full Kit	£50.00	£58.75	e
Risc OS 3.1 10 Pack	£290.00	£340.75	e
AKA32 Acorn SCSI Card	£125.00	£146.87	c
Std SCSI Card	£99.00	£116.33	c
Ethernet Card	£110.00	£129.25	c
Ethernet Card & Access+	£122.00	£143.35	c
Float. Point Accelerator	£115.00	£135.12	c
User Port Analogue/MIDI	£55.00	£64.62	c

A4000 Upgrades

2-4Mb Mem Upgrade	£83.00	£97.52	b
540Mb IDE Hard Drive	£125.00	£146.87	d
540Mb SCSI Hard Drive	£135.00	£158.62	d
1Gb SCSI Hard Drive	£189.00	£222.07	e
Keyboard Ext. Cable 2M	£6.50	£7.64	b
KCS Replacement Mouse	£10.00	£11.75	b
Acorn Mouse	£20.00	£23.50	b
Mouse Ext. Cable 2M	£6.50	£7.64	b
Monitor Ext. Cable 2M	£6.50	£7.64	b
AKA32 Acorn SCSI Card	£125.00	£146.87	c
Std SCSI Card	£99.00	£116.33	c
Ethernet Card	£110.00	£129.25	c
Ethernet Card & Access+	£122.00	£143.35	c
All CD Roms are External			
Twin (2x) CD Rom Par.	£175.00	£205.63	e
Quad (4x) CD Rom SCSI	£175.00	£205.63	e
Oct (8x) CD Rom SCSI	£245.00	£287.87	e
14.4k Ext. Fax/Modem	£79.00	£92.82	e
28.8k Ext. Fax/Modem	£145.00	£170.37	e
14.4k Fax/Modem BABT	£99.00	£116.33	e
28.8k Fax/Modem BABT	£185.00	£217.37	e

A3010 Upgrades

	Ex Vat	Inc Vat	
1-2Mb Mem Upgrade	£39.00	£45.82	b
2-4Mb Mem Upgrade	£89.00	£104.57	b
IDE Interface for 2.5"	£55.00	£64.62	c
170Mb IDE Hard Drive	£89.00	£104.57	d
250Mb IDE Hard Drive	£120.00	£141.00	d
540Mb IDE Hard Drive	£160.00	£188.00	d
Ext. Par. CD ROM 2x	£175.00	£205.62	e
14.4k External Modem	£79.00	£92.83	e
28.8k External Modem	£145.00	£170.37	e
14.4k Fax/Modem BABT	£99.00	£116.33	e
28.8k Fax/Modem BABT	£185.00	£217.37	e
Ethernet Card	£110.00	£129.25	c
Ethernet Card & Access+	£122.00	£143.35	c
KCS Replacement Mouse	£10.00	£11.75	b
Acorn Mouse	£20.00	£23.50	b
Mouse Extension Cable	£6.50	£7.64	b
Monitor Extension Cable	£6.50	£7.64	b
Scart TV Lead	£8.50	£9.99	b
Microvitec 14" Monitor	£225.00	£264.37	e

A3000 Upgrades

1-2 Mem Upg Non Exp.	£25.00	£29.37	b
1-2 Mem Upgrade Exp.	£55.00	£64.62	b
2-4 Mem Upgrade Chips	£79.00	£92.82	b
1-4 Mem Upgrade	£114.00	£133.95	b
Serial Port upgrade	£19.00	£22.32	b
IDE Interface for 2.5"	£55.00	£64.62	b
170Mb IDE Hard Drive	£89.00	£104.57	d
250Mb IDE Hard Drive	£120.00	£141.00	d
540Mb IDE Hard Drive	£160.00	£188.00	d
14.4k External Modem	£79.00	£92.82	e
28.8k External Modem	£145.00	£170.37	e
14.4k Fax/Modem BABT	£99.00	£116.33	e
28.8k Fax/Modem BABT	£185.00	£217.37	e
Ethernet Card	£110.00	£129.25	c
Ethernet Card & Access+	£122.00	£143.35	c
KCS Replacement Mouse	£10.00	£11.75	b
Acorn Mouse	£20.00	£23.50	b
Mouse Extension Cable	£6.50	£7.64	b
Monitor Extension Cable	£6.50	£7.64	b
Scart TV Lead	£8.50	£9.99	b
		£9.99	b
Risc OS 3.1 Chipset	£29.00	£34.07	b
Risc OS 3.1 Full Kit	£50.00	£58.75	e
Risc OS 3.1 10 Pack	£290.00	£340.75	e
AKA32 Acorn SCSI Card	£125.00	£146.87	c
Std SCSI Card	£99.00	£116.33	c
Podule Casing	£20.00	£23.50	c
MFM Interface	£15.00	£17.62	b
User Port Analogue./MIDI	£55.00	£64.62	c
800k Floppy Disk Drives	£38.00	£44.65	c

- 800k In Stock (dealer Enquires Welcome)

Syquest

Internal Drives	Ex Vat	Inc Vat	
200Mb SCSI	£279.00	£327.82	e
270Mb SCSI	£219.00	£257.32	e
270Mb IDE	£219.00	£257.32	e
105Mb IDE	£145.00	£170.37	e
External Drives & PSU			
105Mb SCSI	£150.00	£176.25	e
270Mb SCSI	£269.00	£316.07	e
Cartridges			
200Mb	£52.00	£61.10	b
270Mb	£38.00	£44.65	b
135Mb	£15.00	£17.63	b
40Mb	£37.00	£43.47	b

Note: Only Use SCSI for Acorn.

Scanners



Scanlight 256	£129.00	£151.57	e
Scanlight 256 Video	£189.00	£222.07	e
Flatbed A4 Colour			
Mustek SP2400dpi SCSI	£270.00	£317.25	e
Epson GT 5000 SCSI	£379.00	£445.32	e
Epson GT 8500 SCSI	£429.00	£504.07	e
Epson GT 9000 SCSI	£529.00	£621.57	f
HP Scanjet 4c SCSI	£645.00	£757.87	f
Vision 24 Digitiser	£65.00	£76.37	e
Hi-Vision Digitiser A5k	£90.00	£105.75	e
ImageMaster & Twain	£25.00	£29.37	b

Speakers



80w Speakers & Amp	£25.00	£29.37	e
240w Speakers & Amp	£38.00	£44.65	e
300w Speakers & Amp	£45.00	£52.87	e
Microphone	£7.00	£8.22	b
Clip On Microphone	£6.50	£7.64	b

Stylus 820



720 dpi Monochrome Inkjet Printer
Upgradeable to Colour - 3 Year Warranty
Epson Stylus 820 £155.00 £182.12 e

Stylus Colour IIs



720 dpi Colour & Black Inkjet Printer
3 Year Warranty, Interchangeable Cartridge
Epson Stylus Colour IIs £175.00 £205.62 e

Stylus Colour II



720 dpi Photo Real Colour Inkjet Printer - 3 Year Warranty, Double Density Black. Prints on to Plain, Coated & Glossy Paper & OHP's.

Supplied with Acorn Drivers on request.
Stunning Output - Turbo Driver Available
Epson Stylus Colour II £250.00 £293.75 e

Arcshare

Acorn to PC Networking Software

PC to Acorn Networking has never been easier than this!

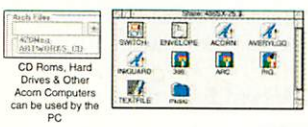
Arcshare is a program that runs from the PC, and fools the PC into thinking it is an Acorn Access system.

This gives that option of copying files from the PC to the Acorn or vice versa. Using an easy to use point & click interface on the PC you can quickly retrieve files from any Acorn computer on the network.

Any size of file can be transfered. If a file is transfered from an Acorn to a PC, then back again, you'll find that the filetypes are automatically updated.

Ring today, tp find out how Arcshare can help you integrate PC systems to existing Acorn networks.

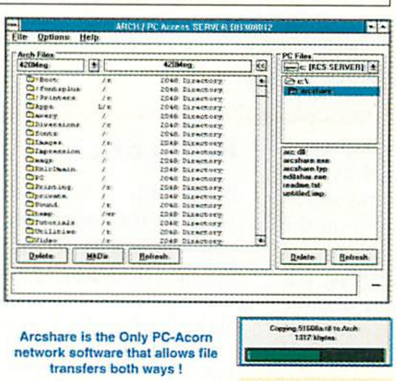
Note for Programmers: Arcshare can now support DDE Calls from the PC, ring for further details.



CD Roms, Hard Drives & Other Acorn Computers can be used by the PC

The PC Directory looks like just another Acorn Directory, thanks to Automatic Remote filetyping. Just drag & Drop the file using the Acorn interface.

Very easy to use!



Arcshare is the Only PC-Acorn network software that allows file transfers both ways !

Latest Version of Server now includes a DDE Interface!

Arcshare Server £99.00 b £116.33

News:

Kimberley Computers Ltd is now the new name for Kimberley Computer Services.

We have undergone some major changes over the past few months. We have become incorporated and now trade as a Limited Company. One of the partners has left to do other things, and we have a whole new directive for the coming year.

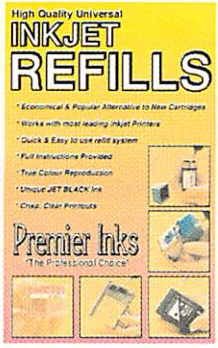
The observant amongst you will have noticed, that we have not advertised for a couple of months. This was due to the re organisation.

As well as a name and entity change, we have modified our internal organisation to provide a better and more complete service. As the next few months progress, we will announce new services & many more new products. Look out for the new adverts.

INKJET REFILLS

COLOURS AVAILABLE FROM PREMIER INKS

Jet Black, Cyan, Magenta, Yellow, Brown, Gold, Silver

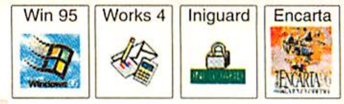


Using Premier Inks refill kits are an economical way of Re using your existing print cartridge. Don't throw it away, refill it - Over 130 printers supported, including the most popular makes. Call for sample printouts.

	Ex Vat	Inc Vat	
Single Refill Kit 1x22ml	£5.10	£5.99	a
Twin Refill kit 2x22ml	£9.35	£10.99	a
Tri Colour refill Kit 3x33ml C/M/Y	£14.46	£16.99	a
Quad Refill Kit 4x22ml	£17.01	£19.99	a
Bulk 1 Refill Kit 1x125ml	£17.87	£21.00	b
Bulk 2 Refill Kit 1x250ml	£32.34	£38.00	b
Bulk 3 Refill Kit 1x500ml	£42.55	£50.00	b
Bulk 4 Refill Kit 1x1Ltr	£59.57	£69.99	c

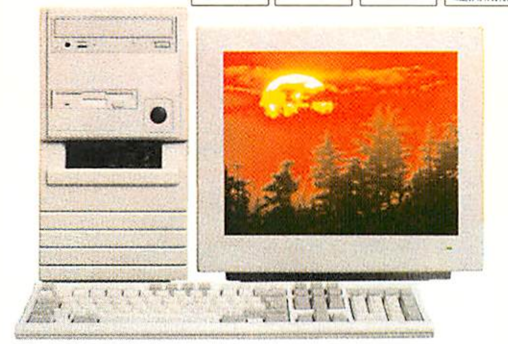
did you know?

Typical Example P100 16Mb



Kimberley Computers also sell IBM compatible PC's & Components

Multi Media P133



- Intel Pentium P133 CPU & Cooler
- Intel Triton Motherboard
- 256k Pipeline Cache RAM
- 16Mb EDO Ram
- 1.3Gb EIDE Hard Drive
- Mini Tower Case
- 6x Speed CD ROM Player
- 16 Bit Stereo Sound Card
- Windows 95 Keyboard
- Microsoft Windows 95
- Microsoft Works V4
- 3 Button Mouse
- 12 Months On site Warranty

£1230.00 £1445.25 F

Interest Free Credit

Available on Most PC Systems, Written Detail on Request

Extension Cables	Ex Vat	Inc Vat	
5 Pin Din Ext. 2M	£6.50	£7.64	b
PS2/Keyboard Ext. 2M	£6.50	£7.64	b
15 Pin D vga/svga Ext. 2M	£6.50	£7.64	b
9 Pin D Serial Ext. 2M	£6.50	£7.64	b
25 Pin D Serial Ext. 2M	£6.50	£7.64	b
Acorn Mouse Ext. 2M	£6.50	£7.64	b
Hot/Cold Mains Lead 2M	£5.00	£5.88	b

Comms Cables			
9/25 Pin - 9/25 Pin Laplink	£8.50	£9.99	b
BI Directional Data 25 Pin D	£11.00	£12.93	b
25 Pin D M-F RS232 2M	£6.50	£7.64	b
9 Pin D M-F RS232 2M	£6.50	£7.64	b
9 Pin D - 25 Pin M Modem	£6.50	£7.64	b
Archimedes Modem Cab 2M	£8.50	£9.99	b

Printer Cables			
BI Directional 2M	£2.55	£3.00	b
BI Directional 3M	£5.00	£5.88	b
BI Directional 5M	£7.00	£8.22	b
BI Directional 10M	£12.00	£14.10	b
Serial Printer Cable 2M	£6.50	£7.64	b
BBC Printer Cable	£6.50	£7.64	b
Centronics 36w-36w 2M	£6.50	£7.64	b
Centronics 36w-36w 2M	£8.50	£9.99	b

Networking Cable/Accs			
BNC Cable/Plugs 2M	£5.00	£5.88	b
BNC Cable/Plugs 3M	£6.00	£7.05	b
BNC Cable/Plugs 5M	£8.00	£9.40	b
BNC Cable/Plugs 10M	£13.00	£15.28	b
BNC HQ Cable Reel 100M	£60.00	£70.50	b
BNC Terminator	£2.00	£2.35	b
BNC Solderless Crimp Plug	£1.25	£1.47	b
BNC Strain Relief Boot	£0.50	£0.58	b
BNC In Line Connector	£2.00	£2.35	b
BNC T Piece	£1.50	£1.75	b
BNC Wall Plate	£7.00	£8.22	b

Internal Cables			
4cm IDE Cable 2.5"	£5.00	£5.88	b
6cm IDE Cable 2.5" (Acorn)	£6.50	£7.64	b
Twin Floppy Cable (PC)	£2.55	£3.00	b
Single IDE Cable 18"	£2.00	£2.35	b
Twin IDE Cable 18"	£2.55	£3.00	b
Custom IDE Cable	ASK	ASK	b
5.25" Power splitter	£2.55	£3.00	b
3.5" Power Splitter	£2.55	£3.00	b
CD Audio Cable Generic	£2.55	£3.00	b

Acorn to Monitor			
A300/3000 - CM8833 Mk2	£8.50	£9.99	b
A300/3000 - CM8833 Mk1	£8.50	£9.99	b
A300/3000 - CM8833 Scart	£8.50	£9.99	b
A300/3000 - Amstrad CPC	£8.50	£9.99	b
A300/3000 - AKF30	£8.50	£9.99	b
A300/3000 - AKF50/Msync	£8.50	£9.99	b
A3010/4k/5k - CM8833 Mk2	£8.50	£9.99	b
A3010/4k/5k - CM8833 Mk1	£8.50	£9.99	b
A3010/4k/5k - CM8833 Scart	£8.50	£9.99	b

Switch Boxes	Ex Vat	Inc Vat	
2 - 1 Printer (Centronics)	£11.75	£13.81	b
4 - 1 Printer (Centronics)	£15.75	£18.51	b
2 - 1 Printer (Serial 25 Pin)	£11.75	£13.81	b
4 - 1 Printer (Serial 25 Pin)	£15.75	£18.51	b
4 Comp. - Mon/PS2 Keyb	£15.75	£18.51	b
4 Comp. - Mon/5 Pin Keyb	£15.75	£18.51	b
2 - 1 Serial Switch 25 Pin	£11.75	£13.81	b
4 - 1 Serial Switch 25 Pin	£15.75	£18.51	b
2 - 1 Scart Switch Box	£11.75	£13.81	b
4 - 1 Scart Switch Box	£15.75	£18.51	b
2 - 1 BNC Make b4 Break	£11.75	£13.81	b
4 - 1 Printer Auto Sharer	£46.00	£54.05	b

Dust Covers			
Acorn A5000	£7.00	£8.22	b
Acorn A4000	£7.00	£8.22	b
Acorn A3010/A3020	£4.50	£5.29	b
Canon BJ10 (Not with ASF)	£4.50	£5.29	b
Canon BJ200/4000	£4.50	£5.29	b
Canon BJ600/610	£4.50	£5.29	b
HP Deskjet 500 series	£4.50	£5.29	b
HP Deskjet 600 Series & 850	£4.50	£5.29	b

Inkjet Cartridges			
Canon BC01	£14.00	£16.45	b
Canon BC02	£15.00	£17.63	b
Canon BJC4000 - Black Tank	£7.00	£8.22	b
Canon BJC4000 - Col Tank	£12.00	£14.10	b
Canon BJC4000 - Col/Bk. H	£21.00	£24.68	b
Canon BJC600 - Black Hcap	£8.00	£9.40	b
Canon BJC600 - Cyan	£6.20	£7.29	b
Canon BJC600 - Magenta	£6.20	£7.29	b
Canon BJC600 - Yellow	£6.20	£7.29	b
Canon BJC800 - Black	£13.50	£15.86	b
Canon BJC800 - C/M or Y	£17.00	£19.98	b
Canon BJ30/70 - Black 3 Pk	£10.50	£12.34	b
Canon BJ70 - Colour Tank	£14.50	£17.04	b
Canon BJ300/330 - Black	£11.50	£13.51	b
Integrex 132 - Black	£10.02	£11.77	b
Integrex 132 - Colour	£18.00	£21.15	b
Epson Stylus Col - Black	£12.00	£14.10	b
Epson Stylus Col - Colour	£22.00	£25.85	b
Epson Stylus Col II - Black	£12.00	£14.10	b
Epson Stylus Col II - Colour	£22.00	£25.85	b
Epson Stylus 800/1000 Black	£8.00	£9.40	b
HP 310/Portable High Cap	£16.00	£18.80	b
HP Deskjet 500 - Black	£16.00	£18.80	b
HP Deskjet 500 - Tri Colour	£20.00	£23.50	b
HP Deskjet 600 - Black	£19.25	£22.62	b
HP Deskjet 600 - Tri Colour	£22.00	£25.85	b
HP Deskjet 850 - Black	£19.25	£22.62	b
HP Deskjet 850 - Tri Colour	£22.00	£25.85	b
Olivetti JP150 - Black	£15.25	£17.92	b
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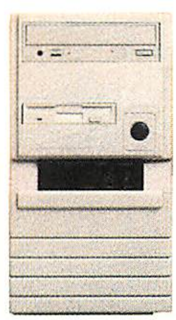
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Works v4 for 95	£69.00	£81.08	b
Office Professional v4.3 3.5" Disks	£210.00	£246.75	e
Office Professional v4.3 CD Rom	£210.00	£246.75	e
Office Professional for Windows 95	£275.00	£323.13	e
Word 6	£225.00	£264.37	e
Word 7 for 95	£225.00	£264.37	e
Excel	£225.00	£264.37	e
Excel for 95	£225.00	£264.37	e
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Powerpoint for 95	£225.00	£264.37	e
Access	£225.00	£264.37	e
Access for 95	£225.00	£264.37	e
Windows 95 Upgrade	£59.00	£69.32	b
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Most of this software should work on the RPC PC card, but check before you order it.

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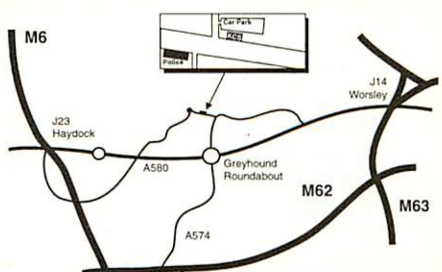
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Running in harmony?

Mike Buckingham gives PC Exchange the once over

Anyone using a PC card in an Acorn Risc PC is going to run into trouble at some stage. It's not that the two systems don't happily (mostly) co-exist. It's that so much on one platform refuses steadfastly to be available to the other. The file types, names and data formats are all different. And exchanging data from one OS to the other is, to put it bluntly, a real pain.

Acorn *PC Exchange* was written to overcome that problem and is a must for anyone running both cards – especially if, like me, you want to do your work in RISC OS (that's why you bought an Acorn isn't it?), but everyone else out there is stuck in the PC rut. Porting the other way gives you access to a wealth of material designed for PCs that isn't likely to be available on RISC OS.

Loading

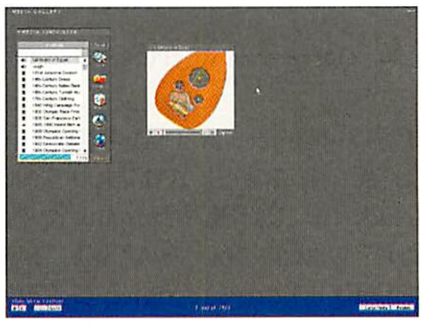
PC Exchange does this porting for you. The utility is, in theory, very simple to use. It arrives on two discs – RISC OS and DOS/Windows – and is accompanied by a short manual which is adequate enough to get you up and running quite happily. Unusually, loading the RISC OS disc is slower and more involved than loading the DOS program as it involves updating BOOT and SYSTEM files. But don't worry, it doesn't take long and shouldn't trouble even the least computer-literate owner.

Once loaded the software appears as PCEx in your RISC OS Apps directory and within a new Acorn program group in Windows and, naturally, to operate it you need both programs up and running. In RISC OS you get a new window with some greyed out icons relating to all the possible file types you might transfer, and in Windows you get an icon on the backdrop (in Windows 3), or on the program bar in Windows 95.

Using the Windows clipboard

The software makes use of the Windows clipboard. Most Windows programs use this clipboard when you use the cut and paste option, or when you copy files. For example, if I load *Works* and cut text, it appears on the clipboard viewer, and from there I could load it into another PC program. But with *PCEx* running it is also now automatically available for RISC OS software.

Reducing the PC card to a window reveals the fact that several icons on the *PCEx* window are now showing in full colour – meaning data is available for use. When you save a *Works* text file (for example), the *data, plain text* and *rich text* icons all become available. In fact, when you save text from Windows, *PCEx* automatically converts it into both *rich text* format – in which much of the font style, size and text position is retained – and plain text, in which almost all of it is lost. Either of these may be dragged and dropped into a RISC OS application. Therefore, if your WP or DTP supports *rich text*, use that, otherwise plain text will suffice.



Encarta allows you to save pictures to the clipboard

The reverse operation is just as easy, but in my experience not as successful. Dragging and dropping a *Fireworkz* or *Textease* file, say, onto the *PCEx* window gives a data file which *Works* won't try to read. For either program you need to open a window, highlight your text and use the *Save selection* menu options. Then you get a text file but you lose the layout information that the *rich text* file format retains. Using the same route from *Impression* gives the text preceded by screens of layout info that you will simply have to delete.



PC Exchange makes them available to RISC OS (which shows how poor the CD-ROM's graphics are!)

Transferring images and sound samples

Of course, it's not just text that can be transferred. *PCEx* also supports image files and sound samples, and a boon to many users, particularly schools, will be the facility to convert graphics. *Encarta*, for example, allows you to save pictures to the clipboard and these can be ported over to *Impression, Ovation* or *Textease* – and this worked like a dream. Other files may be transferred if you know how to access them, but if the file type isn't recognised by *PCEx* it presents the file as raw data.

That aside, *PC Exchange* is a very useful utility that will hopefully be developed as time goes by. Perhaps if Acorn can't support a wider variety of text formats, its authors will get around to writing the relevant driver codes. But even without them, having tried *PCEx* for a while, I wouldn't want to be without it! And for schools wanting to be able to raid PC-based CD-ROMs for graphics to spice up project work, I'm sure it will prove invaluable. AU

Product details

Product: PC Exchange (SKB85)
Price: £25 ex VAT

For education customers:
Supplier: Xemplar Education Limited
Address: The Quorum, Barnwell Road, Cambridge, CB5 8RE
Tel: (01223) 724724

For all other customers:
Contact your local dealer



Jumping off the page

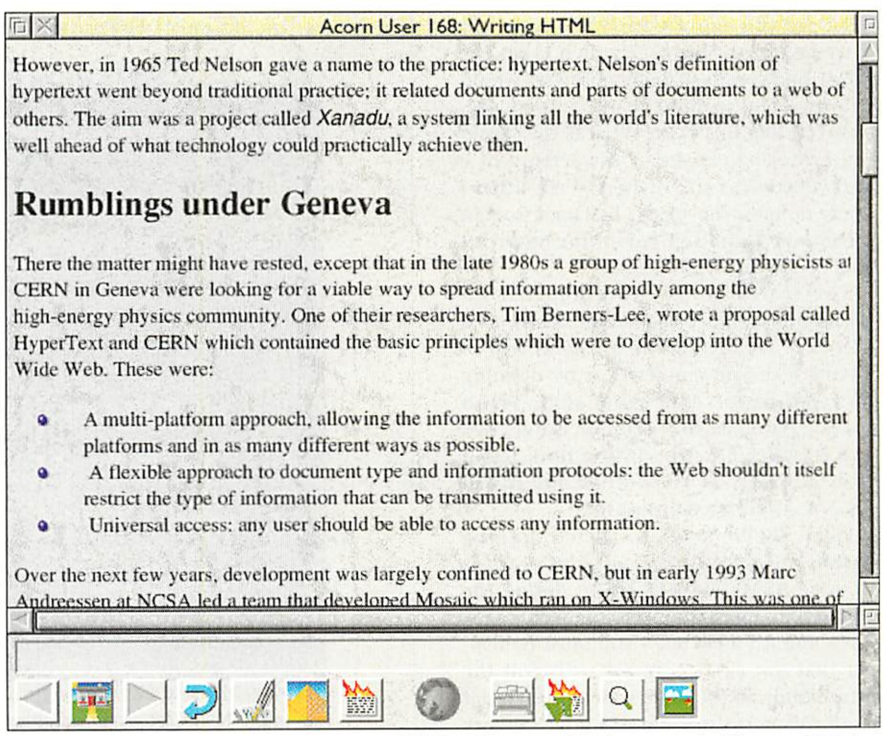
In the start of a series on using your Acorn to create Web pages, David Matthewman explains what HTML is and how to write it

How would you write your diary? Let's assume that you have decided that the minutiae of your everyday life should be recorded for posterity. Perhaps you will one day become an MP, and people will actually pay to read how your breakfast affected the fate of the nation. Or perhaps you're doing it for your own sake, so that you can remind yourself how much more fun life was in the 1990s, and prove it to your doubting grandchildren, too.

So, you sit down at your keyboard, start up your favourite word processor (or, if you're an old-fashioned sort like me, you take a pad of writing paper and fill up your fountain pen), and start writing. You write up the events of last week. All is going well until suddenly, half way through Friday, you find that you're writing about someone you met on the previous Sunday. You could re-introduce him – it was a few pages back since you mentioned him but you did give a fairly full description then – but to avoid repetition you opt to put a small note in brackets:

'(See entry for last Sunday)'

Congratulations. You've just written hypertext.


Acorn User 168: Writing HTML

However, in 1965 Ted Nelson gave a name to the practice: hypertext. Nelson's definition of hypertext went beyond traditional practice; it related documents and parts of documents to a web of others. The aim was a project called *Xanadu*, a system linking all the world's literature, which was well ahead of what technology could practically achieve then.

Rumblings under Geneva

There the matter might have rested, except that in the late 1980s a group of high-energy physicists at CERN in Geneva were looking for a viable way to spread information rapidly among the high-energy physics community. One of their researchers, Tim Berners-Lee, wrote a proposal called HyperText and CERN which contained the basic principles which were to develop into the World Wide Web. These were:

- A multi-platform approach, allowing the information to be accessed from as many different platforms and in as many different ways as possible.
- A flexible approach to document type and information protocols: the Web shouldn't itself restrict the type of information that can be transmitted using it.
- Universal access: any user should be able to access any information.

Over the next few years, development was largely confined to CERN, but in early 1993 Marc Andreessen at NCSA led a team that developed Mosaic which ran on X-Windows. This was one of

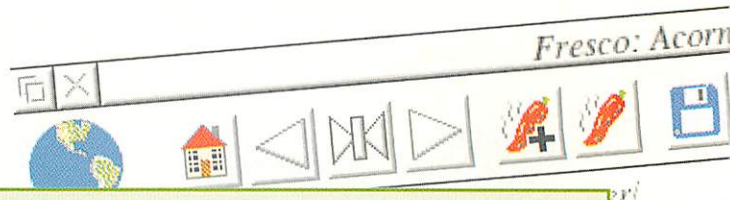
HTML as it appears in a browser – in this case, *Webster*, which emphasises text by writing it in bold

HyperText Markup Language

HTML (HyperText Markup Language) is the language of the World Wide Web on the Internet, but it's by no means restricted to that. You could easily write your diary as a set of HTML files on your hard disc and browse through them using a Web browser without going anywhere near the Internet.

The term *hypertext* is explained in a separate box in this article (that was a hypertext link, by the way). *Markup* means the text is marked by using a series of tags to indicate any deeper meaning associated with words; whether they should be emphasised, if they are part of a list and so on. If you ever used a word processor like *View* on the BBC Micro you may know what I mean – it was the way bold and italic text was indicated there.

It is vitally important to distinguish at this point between *markup* and *DTP*. In DTP you have full control over the final appearance of the document. Programs fall over themselves to ensure that what you write is as close as possible to how the document will appear when printed. Writing HTML is different. It is true that when you view HTML in a typical Web browser



it will be displayed with particular fonts, and italic and bold text, often with pictures alongside text on the page. However, the final appearance of the document is down to the browser, *not* the person writing the page. The browser is told: 'This section of text is a heading' or 'that section of text should have strong emphasis', and the browser program itself decides how this should translate into fonts and so on.

In DTP terms, this is like a laser printer deciding that your layout is a bit poor, and re-doing it with four columns and a different font. But for HTML it makes sense because a page on the Web will be viewed by many different browsers on many different machines, and fixing upon a single layout that will look correct on all of them is impossible. Instead, you mark your text up with cues that will help the browser to display it in the best way possible, whatever system it is running on.

To see this more clearly, consider an extreme type of browser which takes the HTML and speaks it. Such a browser would be very useful to blind people and, indeed, browsers like this exist. What is the speaking browser to make of the setting of a particular point size or font? Very little: I know no one who speaks in Times Roman (although I know plenty who might as well be talking Zapf Dingbats).

The instructions contained within HTML are designed to put the text into a particular context, either by marking it as having a certain emphasis or by defining its relation to some other text. Tell a speaking browser that a phrase is italicised and it will ignore the instruction; tell it that the phrase is *emphasised* and it will know to stress it as it speaks it.

Okay, I'll come clean. There's nothing to stop you actually using all sorts of tricks in your HTML code to try to define the layout and appearance of your Web pages. But – and it's a *big* but – you must remember that not every browser will treat the information in the same way or even use it at all. When starting out, it's safer to mark your pages up strictly for context and content rather than for appearance.

ZapHTML

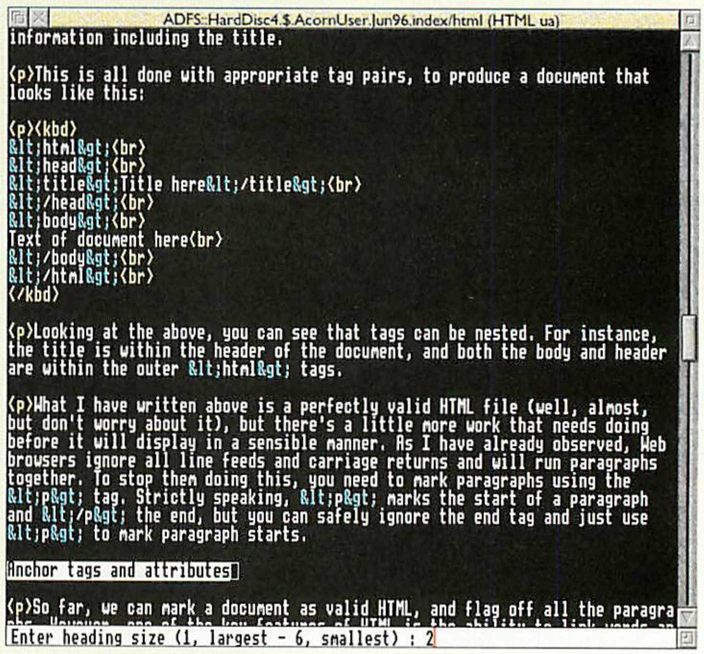
Supplier: various ftp sites (distributed with *Zap*) and the cover CD-ROM

If, like me, you're a *Zap* fan, then I can highly recommend *ZapHTML*, a free HTML mode for *Zap* written by Matthew Hambley. As well as making the tags a different colour so that you can easily see what is text and what is markup, any of the HTML tags can be generated by a pair of key-presses. The module currently has a few quirks and little documentation, but the odds are that if you're a *Zap* fan this isn't going to worry you (*StrongEd* fans needn't despair because there are rumours of an HTML mode coming for that program too.).

ZapHTML will appeal to anyone who basically knows how to write HTML and just wants a quick way to enter the tags. I use it a lot; much of the Computer Concepts site was written using it. It's still really in beta-test at the time of writing, and Matthew has great plans for it.

Once you've used *ZapHTML* for long enough to learn the short-cuts, it's one of the quickest ways of entering straightforward HTML available. HTML 1.0 tags are catered for, but you're on your own when creating forms, tables, or fancy-coloured text; certainly a limitation.

If there's good free software around, would I ever recommend spending money on an HTML editor? Well, not everyone will be happy with *ZapHTML*; it's a bit of a hacker's solution and you need to remember some awkward key combinations to make it work. If this doesn't appeal to you then spending money on *HTMLEdit* would be a better idea – it's a professional package with a good manual.



```
ADFS::HardDisc4.$.AcornUser.Jun96.index/html (HTML ua)
information including the title.

<p>This is all done with appropriate tag pairs, to produce a document that
looks like this:

<p><kbd>
&lt;html&gt;<br>
&lt;head&gt;<br>
&lt;title&gt;Title here&lt;/title&gt;<br>
&lt;/head&gt;<br>
&lt;body&gt;<br>
Text of document here<br>
&lt;/body&gt;<br>
&lt;/html&gt;<br>
</kbd>

<p>Looking at the above, you can see that tags can be nested. For instance,
the title is within the header of the document, and both the body and header
are within the outer &lt;html&gt; tags.

<p>What I have written above is a perfectly valid HTML file (well, almost,
but don't worry about it), but there's a little more work that needs doing
before it will display in a sensible manner. As I have already observed, Web
browsers ignore all line feeds and carriage returns and will run paragraphs
together. To stop them doing this, you need to mark paragraphs using the
&lt;p&gt; tag. Strictly speaking, &lt;p&gt; marks the start of a paragraph
and &lt;/p&gt; the end, but you can safely ignore the end tag and just use
&lt;p&gt; to mark paragraph starts.

Anchor tags and attributes

<p>So far, we can mark a document as valid HTML, and flag off all the paragra
Enter heading size (1, largest - 6, smallest) : 2
```

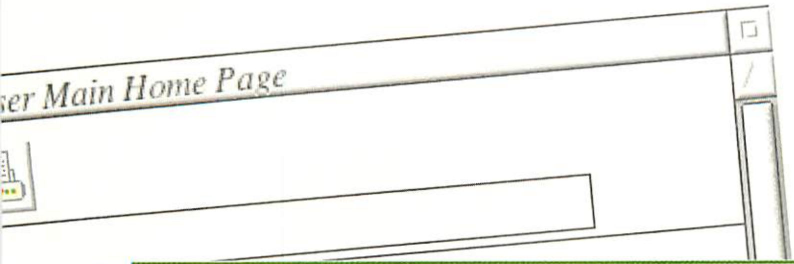
Editing HTML in *Zap* using Matthew Hambley's module. Note that if you want to write '<' or '>' directly rather than as parts of tags, you must refer to them as '<' and '>' respectively.

HTMacroL

Supplier: various ftp sites, and the cover CD-ROM
Price: Free

Richard Goodwin has produced a free program which works along similar lines to *HTMLEdit* – *HTMacroL*. Again, you are presented with a tool bar and HTML tags are inserted when the buttons are clicked on, but it's a lot less sophisticated than *HTMLEdit*. For one thing the start and end tags need to be entered separately; you can't just select a region of text and expect it to put the tags at either end. Also, the buttons generate pre-set text – no editable dialogue boxes here. On the other hand, because *HTMacroL* simply types text at the cursor, it works with whatever text editor you happen to like, or even *Textease* and other DTP packages.

Although the text inserted by the buttons is pre-set it *is* configurable. You can change the 'address' button to insert a long HTML string with your address, for instance. I don't like interrupting my typing to move the mouse, but if you're a tool bar fan then *HTMacroL* might be just what you need. After all, it's free.



FEATURE

HTMLTools for Impression

Supplier: most ftp sites and the first Acorn User **CD-ROM**
Price: Shareware (£15)

If you're after a more WYSIWYG display and you have *Impression* then you might consider Ben Summers' *HTMLTools* for loading and saving HTML from *Impression*. It's important to get this in perspective because it *won't* give a fully WYSIWYG display, but you will get something much closer to what you'll see in a browser.

Using *Impression* to mark up your text has a number of advantages, not least of which is the built-in spelling checker. However, partly because of the way *Impression* loads and saves text, it's possible to end up with rather messy HTML using these tools, and it often needs tidying up afterwards. Inserting images and anchors can be a real pain, and if you have nested tags the 'inside' tag can get lost all to easily.

These tools were very welcome when they appeared over a year ago because they were the first attempt to produce HTML-writing software for the Archimedes. They're showing their age now, sadly, but might still be worth it for *Impression* owners who don't want to switch to anything else to write HTML. I certainly wouldn't advise anyone to buy *Impression* specially to write HTML; it's not really a job the program's suited to.

The tools are Shareware, so do register them if you use them.

HTMLEdit

Supplier: R-Comp
Tel: (01925) 755043
Fax: (01925) 757377
E-mail:HTMLEdit@arsvcs.demon.co.uk
Price: £30 (version 1), £45 (version 2)

HTMLEdit is the most professional HTML-editing software on the Archimedes. When loaded up this looks superficially like *Edit* with an extended tool bar, but there's a lot more to it than that. All the HTML tags correspond to buttons on the tool bar so if you want, say, to put some text into heading style 1 then you highlight the text, click on the 'headings' pop-up menu and choose 'heading 1'. The correct start and end tags are automatically inserted. If you don't have any text selected at the time, you get the <h1></h1> tag pair with the cursor positioned neatly between them ready for you to type a heading in.

HTMLEdit knows about all the HTML 2.0 tags and many of the Netscape and proposed HTML 3.0 extensions. It doesn't do tables yet, but that's about the only significant omission.

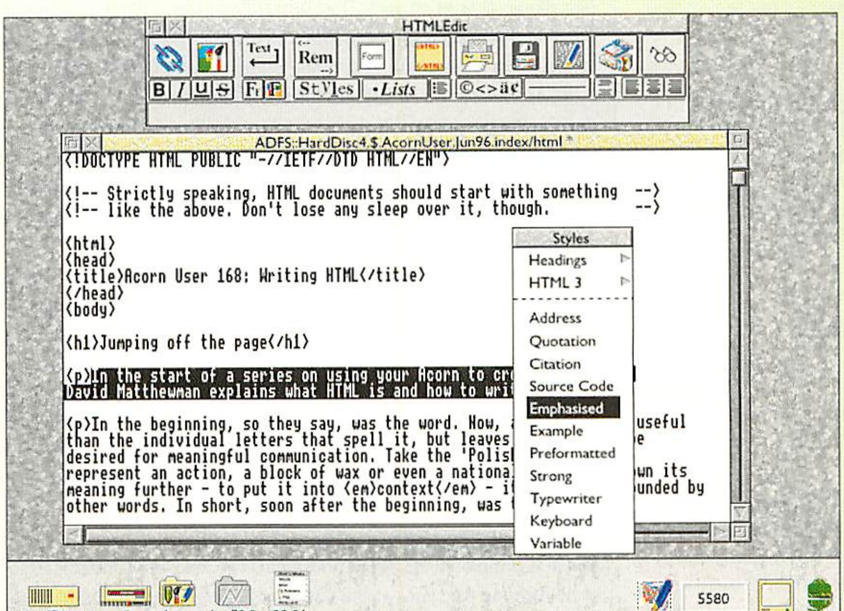
Like most HTML editors on any platform, *HTMLEdit* doesn't try to be WYSIWYG. What you edit is the raw HTML. To see it as a browser would see it you must load it into a browser. I have never found this to be a problem, in fact, I prefer this approach.

HTMLEdit really comes into its own when editing images or links. Not only does the dialogue box allow you to set the relevant options really quickly – and reminds you to enter alternative text for an image – but it will automatically enter the name of a file dragged to one of the writable icons, intelligently converting slashes to fullstops in file names. The newly-released *HTMLEdit 2* will even work out the relative pathname of the file, making page linking even more painless.

HTMLEdit will appeal greatly to HTML novices and is highly recommended to anyone who can't face inserting all the tags by hand. Its main drawback is that it is tied to the *Edit* interface – *Zap* and *StrongEd* fans will find it a step backwards. The original program can only open one file at once, so I'd certainly recommend going for *HTMLEdit 2* where this problem has been fixed. It's very handy to be able to cut and paste chunks of HTML from one document to another. Couple this with the improved user interface and keyboard short cuts of version 2 and I would really encourage you to spend the £15 extra on the newer version. It stands up well against much more expensive programs on other platforms.

Is it worth paying anything, though, when there is free HTML-writing software available? Certainly *HTMLEdit* is worth it for novices; it's as painless an introduction to writing HTML as you're going to get on the Archimedes. More experienced coders may prefer a less sophisticated editor. There's nothing intrinsically hard about writing HTML, after all, and the full range of tags isn't that awkward to learn.

That said, none of the other HTML editors has the range of features that *HTMLEdit* boasts. It's constantly being developed, and R-Comp responds very well to user feedback, so it should keep up with any future changes in HTML.



HTMLEdit 2 from R-Comp is a user-friendly way to edit files for your Web site

Marking up text

If you take a block of plain text, file-type it as HTML and send it to a browser, you will notice a number of things at once. The first is that it *will* display it. Formally, there are a number of items that should be present in a document to make it valid HTML, but very few browsers will actually sulk if they aren't there. The second point is that any extraneous spaces, line feeds and carriage returns in the text will be ignored. The browser will simply skip over them and display the text in one block with uniform spacing between the words. There are circumstances when you can make the browser care about extra spaces and so on, but we'll cover those later.

Marking up the text to turn it into HTML involves inserting *tags*. Tags are instructions contained within angle brackets '<>' and are case-insensitive. They usually come in pairs – a 'turn on' and 'turn off' tag – with the second of the two being preceded by a slash '/'. For example, to emphasise a word or phrase, enclose it within the **** tag pair, as in:

```
This point is <em>very</em>
important.
```

I'll talk about the other kind of tag – the self-contained one – in the next issue.

An HTML skeleton

Now that you've seen how tags work – it's simple really – you can create your own *bona fide* HTML file from a block of text. First, you have to tell the browser that the whole document is HTML by enclosing it within the **<html></html>** tag pair. In other words, put:

```
<html>
```

on the first line and:

```
</html>
```

on the last.

Next, you have to separate the body of the document (which contains the text) from the header which contains other information including the title. This is all done with appropriate tag pairs to produce a document that looks like this:

```
<html>
<head>
<title>Title here</title>
</head>
<body>
Text of document here
</body>
</html>
```

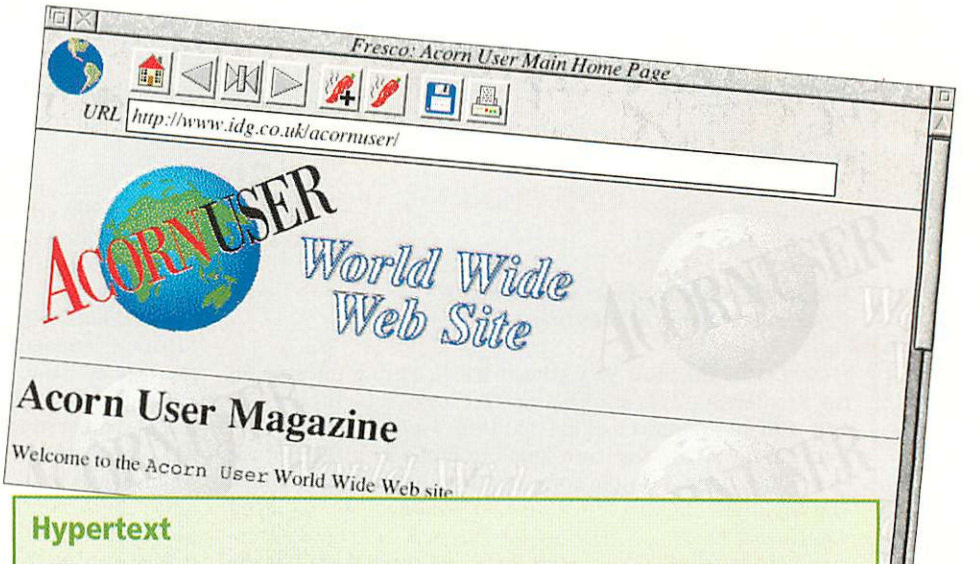
Looking at the above, you can see that tags can be nested. For instance, the title is within the header of the document, and both the body and header are within the outer **<html>** tags.

What I have written above is a perfectly valid HTML file (well, almost, but don't worry about it), but there's a little more work that needs doing before it will display in a sensible manner. As I have already observed, Web browsers ignore all line feeds and carriage returns and will run paragraphs together. To stop them doing this, you need to mark paragraphs using the **<p>** tag.

Strictly speaking, **<p>** marks the start of a paragraph and **</p>** the end, but you can safely ignore the end tag and just use **<p>** to mark paragraph starts.

There's a wealth of further HTML examples on this month's CD-ROM, if you are curious about what other tricks you can play. Next issue I'll show you how to add images to your text, and how to link between documents using the anchor tag. Until then you should spend your time being sure that you understand tags, and how to open and close tag pairs. And repeat ten times before you go to sleep: 'I will write my HTML to be meaningful to speaking browsers.' AU

• David Matthewman helped to set up and maintain the Acorn User *Web site, and now works as a full-time Web designer at Computer Concepts and Xara Limited (http://www.cconcepts.co.uk/).*



Hypertext

In the beginning, so they say, was the word. Now, a word is more useful than the individual letters that spell it, but by itself leaves something to be desired for meaningful communication. Take the word 'Polish'; it can represent an action, a block of wax or even a nationality. To pin down its meaning further – to put it into *context* – it must be surrounded by other words.

Put another way, soon after the beginning was the sentence.

If a word is seen as a point, and a sentence a line, then clearly a paragraph extends this into two dimensions as an area. Then what? Paragraphs follow one another in sequence and there is no way of writing a sentence that literally 'jumps off' the page. Even a book is really just a collection of pages; adding another 'dimension' to text requires rather more work.

At *Acorn User* we sometimes include a jargon box to avoid the messy solution of having to define a term each time it appears, which can break up the flow of a sentence, and we will also refer back to articles in previous issues where they are relevant. In this way we create *links* between separate blocks of text. These ways of extending plain text are not new practice, and publishers have been doing it for centuries without needing any new and frightening-sounding words to refer to it.

However, in 1965 Ted Nelson gave a name to the practice: *hypertext*. Nelson's definition of hypertext went beyond traditional practice; it related documents and parts of documents to a web of others. The aim was a project called Xanadu, a system linking all the world's literature, which was well ahead of what technology could practically achieve then.

There the matter might have rested, except that in the late 1980s a group of high-energy physicists at CERN in Geneva were looking for a viable way to spread information rapidly among the high-energy physics community. One of their researchers, Tim Berners-Lee, wrote a proposal called *HyperText and CERN* which contained the basic principles which were to develop into the World Wide Web.

Hypertext, as we know it now, means text that has been extended so that it links to other text in a completely different document. The links are a little like footnotes, except that instead of pointing to two lines at the bottom of a page they can point to whole books. Many links can point to the same book, and the book can itself have links within it. It is this *web* of links that allows you to add a third dimension to text – to jump off the page.



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REVIEW

The many headed

A new way of adding power to your Risc PC has been released. Steve Turnbull finds out what it can do

In the last month two hardware upgrades to the Risc PC have been announced: The StrongARM is a simple chip replacement which can boost the speed of an ARM610-based Risc PC by at least seven times. And then there's the Hydra board from Simtec.

From a purely naming viewpoint, the Hydra (many-headed) should have been called Shiva (many-armed), but unfortunately that name's been taken.

The Hydra allows you to add up to four additional standard ARM processors and, with suitable software, use them to provide simultaneous processing power. This, of course, is the critical difference between StrongARM and Hydra: The StrongARM will run all software faster, while only Hydra-aware software can use the extra processors.

Hardware

The Hydra board plugs into the processor socket nearest the front of the machine and needs its own power supply. The board itself lies flat, parallel to the motherboard supported by the socket and along the ridge at the back of the machine. There were no sticky pads to hold the board but it was still pretty solid.

On the upper surface of the board are eight sockets, all clearly labelled: There's the main processor slot where your original 610, 710 or SA-110 fits, and the second processor slot for the PC card (or whatever). There's one slot for (optional) on-board memory and then the four extra processor slots. At right-angles to these is the final slot which is for the control logic which allows each processor to access the bus without interfering with each other.

The whole design is very neat, as you can see from the pictures, but there is one caveat: If you want to close the case of your Risc PC afterwards you'll need a two-slice because the processors stick well above the level of the single slice. Switching on reveals no special messages, in fact you'd never know you have a Hydra in the box unless you choose to use it.

The board works fine without extra processor cards. However, obtaining additional processors is another potential hurdle. The upgrade from ARM610 to ARM710 has left Acorn with a huge pile of unwanted 610s, but many of them don't work – as I found to my cost, out of five only two worked. If you haven't upgraded yet you could hang on to your old processor.

Getting hold of the old 610s is the cheapest option as buying new 710s is considerably pricier, but you could populate the entire board with 810s or StrongARMs when they appear, or have a mix. Although the current board holds four additional processors, this is not to say that later versions won't hold more, and you don't have to have a fully populated board for it to work.

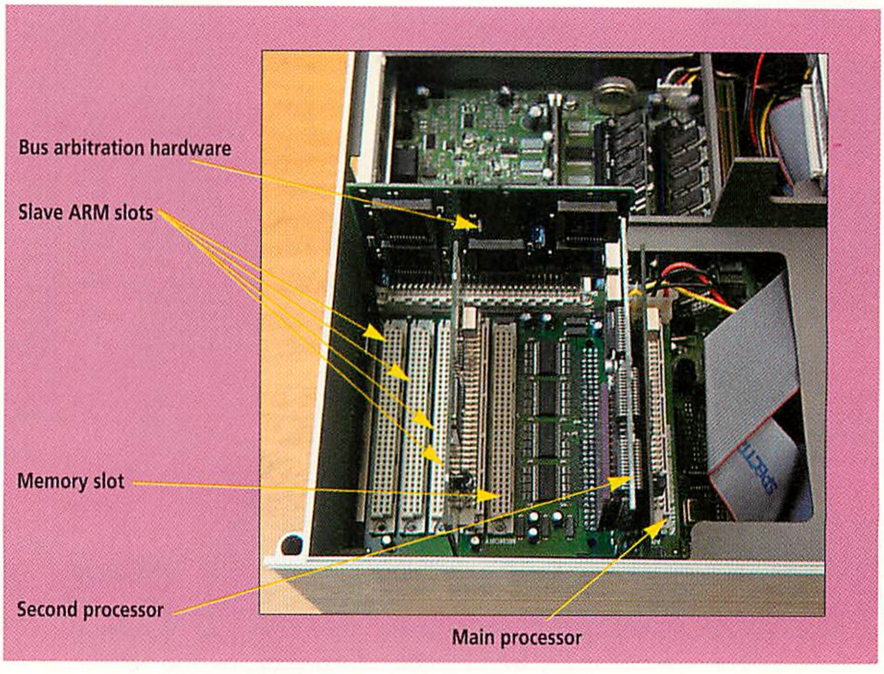
Applications

Well this is a bit problematical at present as there aren't any applications that use the Hydra for any useful purpose. In fact, the only third-party program that exists at present draws Mandelbrots and comes with the Developers' kit.

The main difficulty is that it's not a simple matter converting a program to use the Hydra. It will normally require a complete re-think of the program design to decide what parts of the code can be executed in parallel and what has to stay serial.

For example, redrawing the desktop screen might, potentially, be allocated to the Hydra like this: RISC OS informs the application that it needs to redraw the screen, and to do this it has a list of on-screen rectangles. The application requests the first rectangle, packages up this information and tells the Hydra to execute the redraw code within the given rectangle. The Hydra allocates the first available processor with the task, which it starts to execute.

Meanwhile, the application requests the next rectangle which needs redrawing, packages that information up and tells the Hydra to execute that. The next available processor is given this task, and so on. Potentially, you could have all four processors simultaneously calculating and redrawing their own portion of the screen, and when one finishes it is given its next



Speed tests

We conducted experiments to see whether we could provide some comparative speed tests but, unfortunately, we couldn't get the code implemented in the time available for the review. We'll bring them to you as soon as we can.

monster

task. However, there are problems: The various data buses within the machine can only be accessed by one processor at a time – so there can be a bottleneck with tasks that require a lot of memory access. If lots of calculation is needed to achieve the rendering it will be effective to use the Hydra, otherwise maybe not.

To help solve this problem, Simtec provides the memory board which will allow the Hydra to have its own memory to alleviate the problem. But this wouldn't help much with screen-drawing. So tasks which don't access common memory would be preferable. In fact, the less memory accessed, the better. With something like the calculations required for ray-tracing, calculating for each ray would be a single task – in fact, the great thing about ray-tracing is the fact that every ray is totally independent of all other rays.

For compression and decompression algorithms, lots of calculations are needed for each element. These would certainly benefit from increased processor power, which is why both SpaceTech and Eidos are interested in the Hydra.

Hydrated RISC OS?

For the Hydra to be of benefit to all (or at least many) existing applications would require the underlying operating system to be modified. Unfortunately, there are not many areas where this could easily be done.

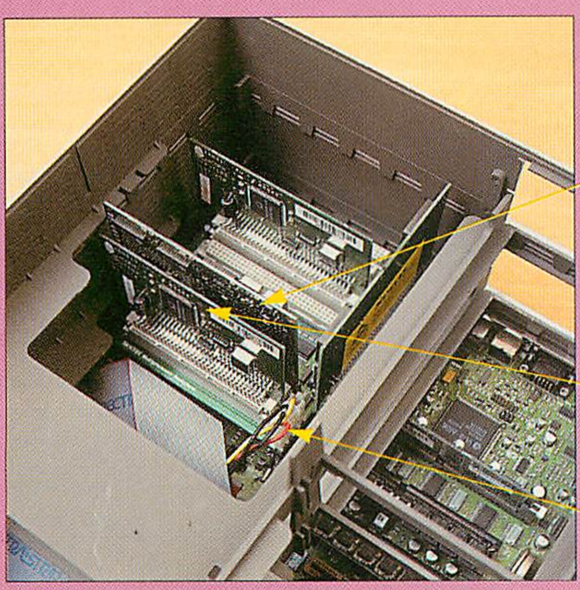
One possibility is a modification of the floating point emulator to carry out its more complex calculations on the Hydra. However, there are considerable overheads in calling the Hydra so it is debatable whether this would really help – it would need to be tested. It's also unlikely that the Wimp Manager could be made to benefit from the Hydra because it's not a transparent system and the individual applications would still need to know that the Hydra was there.

The only way an operating system is going to be able to take advantage of the Hydra is if it's been designed to run on multiprocessors from scratch. Both Taos and RiscBSD (a version of the Unix) are such operating systems.

The Acorn RiscBSD team has been working hard to update its software to use the new board, and once it's working it'll provide a very high-powered UNIX environment at a very low price – even a Hydra fully populated with StrongARMs is pretty cheap for UNIX.

The Taos arena has been pretty quiet recently, but when the Hydra was announced it was stated that a port to the Hydra was intended.

But, of course, neither of these is RISC OS.



Programming

The Hydra interface is provided by a single Hydra module which runs in RISC OS. Each slave processor also has a kernel of code which it runs in addition to any tasks. Data areas can be unique to a processor or shared.

For debugging purposes there's an application called HydraTerm which provides access to the individual processors, allowing tracing information to be displayed so you can find out what's gone wrong when a processor is running a task.

Access to SWIs from the processors is limited. Some have been implemented directly while others are only available through the control processor – it wouldn't be good to have three processors trying to write to the same file simultaneously.

One important thing to understand, for programming purposes, is that Hydra *threads* are not true threads in the usual meaning of the word. A Hydra thread cannot be suspended and resumed, it just executes from the beginning until it either terminates or crashes – hopefully the former.

Also, writing code for the Hydra is currently a matter of writing 32-bit ARM assembler as opposed to the usual 26-bit, in C or C++. Current development tools for this are a bit primitive but several people are working to improve the situation.

The future

It's quite difficult to know how the Hydra will develop. It is quite low cost as a basic unit, about £150, and can be upgraded slowly. However, like all hardware it needs software to work on it. There are several applications being looked at by third-parties to see whether their code would benefit, and some certainly will.

The StrongARM and the Hydra are not mutually exclusive – you can go for one then the other without losing anything. The StrongARM is a pure power upgrade, but the Hydra has more potential if the programmers care to tap it. AU



Expanding the sound-waves

Rob Miller lends an ear to a brand new sound system for Risc OS

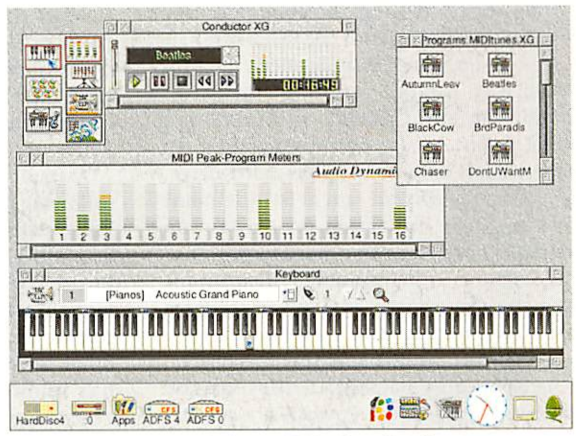
Way back in 1987 when the Archimedes first appeared, the sound system provided was seen (or heard) as nothing short of revolutionary. Not only could you compose and play back complete pieces of music using the supplied *Maestro* package, it was also possible to use sampled sounds for instruments to achieve very impressive results; far removed from the bleeps and squeaks associated with home computers of the time.

Now, with the widespread availability of hardware dedicated to making sound, such as MIDI equipment and sound samplers, the original 8-bit Archimedes sound system seems at best, rather basic. If you were to buy a PC (perish the thought!) today, a high-quality 16-bit sound card is usually provided as standard, and with the increased interest in multimedia, high-quality sound support on any computer is a virtual necessity.

Over the past couple of years, several attempts have been made at providing owners of RISC OS computers with professional quality sound systems. The first of these, the ESP SuperSound Expansion System, provided a fully-fledged, 16-bit sound expansion system incorporating a MIDI interface, a MIDI synthesiser and the ability to play back 16-bit quality sound samples. This has now evolved into the Audio Dynamics PowerWave and comprises a single-width podule containing a dual MIDI interface, plus an optional 16-bit sound sampler and the choice of one of two General MIDI synthesisers.

PowerWave50

The whole philosophy behind the PowerWave sound system is one of upgradability. If you just want to fit a MIDI port to your computer, just buy the Dual MIDI Interface (DMI). If you then want to add sound-sampling capabilities, you can upgrade the DMI with a few extra components. If you want 'real sounds', you can fit one of two optional daughter-boards to the DMI effectively giving a full General MIDI synthesiser in the computer.



The main Conductor window with keyboard and meter

This approach has a number of benefits. First, initial costs can be relatively cheap with the DMI costing only £109.10 (inc. VAT) for the mini-podule version and £129 (inc. VAT) for the single-width podule version. Both versions of the card (even when fully upgraded) take up only one podule slot. Finally, the card can be upgraded as and when you want the new features.

Before I begin, it's important to mention that this review is based on the fully populated DMI50 card which contains two MIDI interfaces, the Yamaha XG PowerWave expansion card, and the 16-bit sampler upgrade. From now on I'll just refer to it as the DMI50.

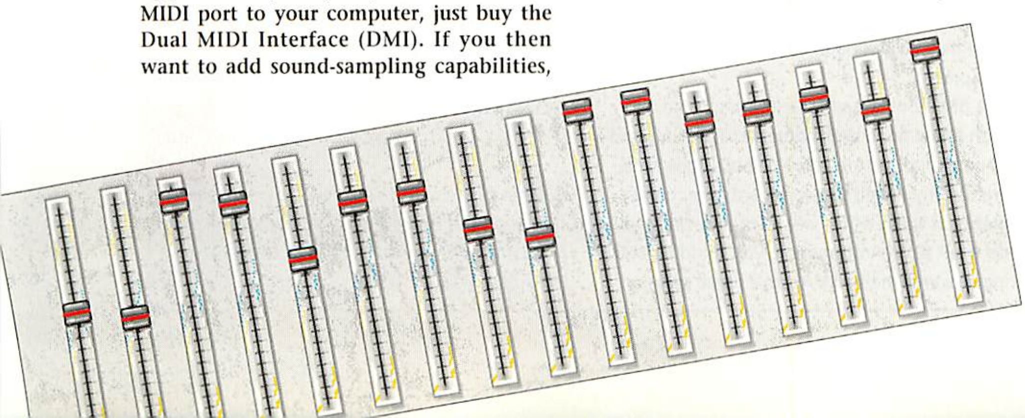
Installation

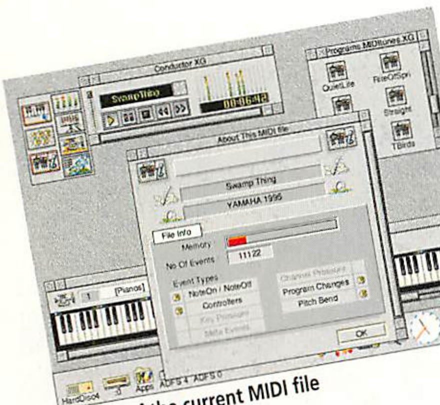
Fitting either version of the DMI is as simple as installing a normal expansion card. Just slot it into place, secure it with screws and that's about it. Expanded versions of the DMI50 (those with the sampling upgrade fitted) also require the connection of a lead between the computer's motherboard and the expansion card itself. This simply fits onto existing pins and should be easy for anyone who's taken the lid off of their computer before.

Because the DMI50 provides not one but two separate MIDI ports, there is insufficient space on the back of the expansion card to fit two sets of MIDI In and MIDI Out sockets. Couple this with the fact that you also have two audio in lines (for sampling purposes) plus two audio out lines in the form of left and right phono sockets and a 3.5mm jack socket, you soon realise how tight space is.

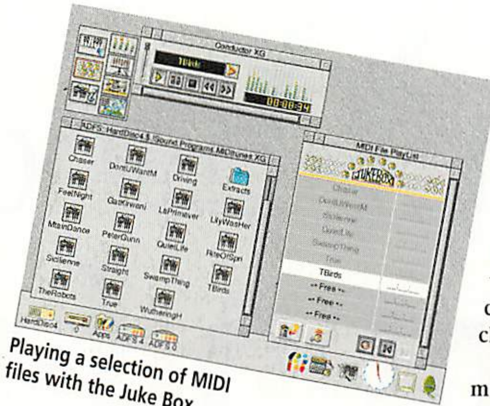
Rather than leave anything out, Audio Dynamics has done the same as Computer Concepts did with its Lark card which is to have a single 15-way socket on the back of the card. A special adapter then plugs into the socket to provide four MIDI sockets (two IN and two OUT) and left and right phono sockets for connection to a hi-fi.

Once you've got things plugged into all the sockets on the back of the DMI50, it can be a bit confusing so it's worth labelling the different wires if you can. Better still, try and use different coloured cables for different things and that way you'll be able to work out what's what even if everything becomes tangled.

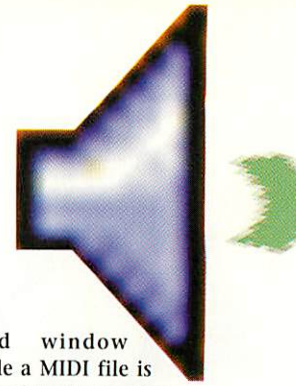




Details of the current MIDI file



Playing a selection of MIDI files with the Juke Box



Software

Like most expansion cards, the basic driver software is supplied in ROM on the card itself so it's ready to use when the machine is switched on. A quick check by typing *HELP MIDI at the command line proved all was well with the installation.

Two main RISC OS applications are provided with the full version of the cards, Conductor and Control, and installing them is just a case of copying them to somewhere suitable on your hard drive. Unlike most software, there is little point in using copy protection systems as you actually need the extra hardware to use the software. A registration system means that you can get new versions of software as and when they become available.

Conductor, as its name sort of suggests, is used to play back MIDI files via the DMI50, either on the PowerWave synthesiser, or on any other MIDI equipment you may have joined to the interface. It also allows you to change parameters such as Reverb and Chorus, plus all sorts of things like volume and stereo panning of different channels.

Once I had the card installed, connected to my hi-fi, and the software loaded up, it was time to hear just what the DMI50 could do. The simplest way of testing the card was to just drag a MIDI file onto the Conductor icon after which a few seconds later it is played. Unless you've heard a MIDI instrument in the past couple of years, you're little prepared for what the PowerWave is capable of.

With its 16 channels, the DMI50 can handle complex pieces of music with ease and some of the orchestral demonstration files supplied with the card sound just like the real thing. You would have thought it would be harder to 'synthesise' real instruments such as strings or clarinets, but everything comes across as very realistic and believable.

Conductor is divided up into several sections; a main control window and a number of other windows that give access to things like level meters and the 'soft keyboard'. The main window displays the title of the current MIDI file, plus the elapsed playing time. Specific information on the MIDI file currently loaded can be found using the information window. This gives details such as the name of the piece of music, copyright (if any), plus the number of events and what events have been used.

A set of controls allows one to start, pause or stop a tune as well as fast rewind or fast forward if required. Finally, a small level meter shows the state of each MIDI channel in a similar way to a dB meter on a hi-fi.

A small toolbox provides access to the following features. First off is the 'soft-keyboard' which gives a visual representation of a MIDI keyboard. Like all the graphics in the PowerWave software, the keyboard looks excellent. Not satisfied with a simple picture of a keyboard you might find in other software packages, Audio Dynamics has gone to the bother of designing everything to look as realistic as possible.

The keyboard keys are an excellent example and 'depress' convincingly when clicked on. An amazing eight frames of animation are used for each key press which may sound like overkill, but actually works perfectly. If you have the keyboard window open while a MIDI file is being played in Conductor, keys are highlighted on the keyboard as they are played, which as well as looking good, can help to teach you about chords and such like.

If you are using a large desktop mode (for example, 1280x1024), you can enlarge the keys using a simple magnification control. Everything scales accordingly and it doesn't seem to make any difference to the speed, no matter what magnification you choose. Similarly, if you are using a smaller desktop mode, you can shrink the keyboard enabling you to get more octaves on screen at once.

Instruments

When first run, the keyboard window defaults to the first available General MIDI instrument which happens to be an acoustic grand piano. There are 128 instruments available and divided into 22 categories such as pianos, organs and woodwind, as well as more traditional instruments, The General MIDI specification also provides, in the form of pads, more 'synthetic' noises that you would associate with a synthesiser.

As well as instrumental noises, General MIDI contains a full set of percussion sounds. These are assigned one to a note, rather than having a full eight octaves for each sound. This is quite a sensible approach as you would be unlikely to want to change the pitch of a particular percussion sound. Instruments with which

Where to find MIDI files

A good source of MIDI files is the Internet. There are loads of Web pages dedicated to MIDI which contain all sorts of things like music files, patches and general files for different synthesisers. Like most stuff on the Net, you'll find that the majority is for non-Acorn users but this shouldn't put you off, especially where MIDI is concerned.

One of the fundamental ideas behind MIDI is that it is a cross-platform format designed to be used over a wide range of equipment. Also, the advent of General MIDI means that more MIDI files will work on different makes of equipment.

A brief look around the Internet came up with a few good Web addresses Those I found of particular use are listed below. While none are directly linked to Acorn hardware, there's plenty of them which will be of interest. If you do want Acorn information, you could try starting at somewhere like Acorn's home page (http://www.acorn.co.uk) and then following links from there to other relevant pages.

- **Midi Home Page** http://www.eeb.ele.tue.nl/midi/index.html
- **Cakewalk Home Page** http://www.isvr.soton.ac.uk/People/ccb/Cakewalk/
- **The MIDI Farm Internet** http://www.midifarm.com/
- **MidiWeb** http://www.digiface.nl/midiweb/index.html
- **Betty's MIDI Page** http://www.ping.at/users/akainz/midimani.htm
- **Twin Cities MIDI Home Page** http://www.cs.umn.edu/~fischer/Midi/
- **Classical MIDI Archives** http://www.prs.net/midi.html

Bulletin boards are also a good source of MIDI files and MIDI related info. Arcade is always a good place to start and can be accessed on 0181-654 2212.

Yamaha DB50XG synthesiser

Both versions of the DMI card can be fitted with one of two different synthesisers. The first option is based around an Ensoniq chip set and provides a straightforward General MIDI synthesiser. The second, more expensive option is the Yamaha DB50XG which is normally sold as an upgrade for PC owners who have Soundblaster expansion cards.

The DB50XG provides all the features of a General MIDI synthesiser, plus a number of enhancements such as extra voices and special effects such as reverb, feedback and distortion.

A separate manual (written by Yamaha) is provided with the DB50XG and includes some quite technical information on the inner-workings of the card. If you're new to MIDI, don't expect to get to grips with the hardware straight away.

Audio Dynamics does give a brief explanation of MIDI in the glossary of its manual, but it is, as I said, very brief, so I'd recommend you buy a book on the subject if you want to delve. There are lots of titles around but 'Music in Sequence' by William Lloyd/Paul Terry and 'MIDI Survival Guide' by Vic Lennard are two books worth looking out for.

you might want to do this (for example, kettle drums) are included in the main set of instrument noises.

The level meter in the main Conductor window is mirrored in a separate Peak-program meter window, giving a blown-up version that is much easier to read. The window is divided into 16 sections, one for each MIDI channel. When an instrument is played on a particular channel, a bar is displayed on that section which then 'fades down' as the note fades.

Play lists

Next up is the MIDI file Play List or Juke Box window. This allows you to play a pre-programmed list of up to 10 MIDI files in any order. MIDI files you want to play are simply dragged onto the Juke Box window in the required order. By selecting the Juke Box icon in the main Conductor window, you can control the juke box with the normal playback controls.

Additional skip-track forward and skip-track backward buttons allow you to play the next or previous track respectively and a loop button lets you play a selection of MIDI files repeatedly until you get bored.

Performance characteristics

The three remaining windows provide information on the current state of each channel as well as being able to alter the different characteristics of each instrument being played. The Performance Characteristics window gives general information on the different channels. Along the top of the window are a set of panning controls which display the current position of each channel. These can be altered at any time by clicking on an individual control and then using the slider for that channel to move the sound either to the left or to the right.

Clicking the right-hand mouse on the pan control resets the stereo position to the value first set when the MIDI file first started playing. This coincidentally works with all the controls in PowerWave that change some kind of level, and is a good way of recovering from over zealous parameter changing. The slider controls in the Performance Characteristic window also provide access to volume control on any particular channel. Like the Panning controls, they can also be reset to their original values by clicking on them with the right hand mouse button.

As well as changing the volume of a channel with the volume sliders, channels can be completely muted to cut that particular instrument out of the music. Using the mute feature also has the effect of disabling the panning and volume controls for that particular channel.

The remaining controls in the Performance Characteristics window consist of two pedal options for each channel; one for holding a note and one for softening it, plus an expression control.

Expression levels

Expression is effectively another type of volume control and if you watch it (or them) while a MIDI file is playing, you'll probably notice them increasing and decreasing accordingly as different instruments are faded up and down in the mix.

The expression level of any channel can be altered by clicking on the particular expression control which in turn produces a data over-ride window. The expression level is then changed by means of up or down arrow. Like other controls, a right-hand mouse click resets the value to that when the file originally started playing.

While this way of changing what is effectively a numerical value works OK, it would have been nicer to have a more graphical representation of the setting; perhaps a pop-up slider bar for example.

16-bit sound

Apart from the MIDI, the other main feature of the PowerWave board is its ability to record and playback 16-bit sound. If you've ever had the chance to listen to 16-bit quality sound (most CD players playback at this resolution), you'll know how good it can be. The PowerWave card is no exception and instantly transforms the sound capabilities of your computer (unless of course it's a Risc PC700 or A7000 which has 16-bit sound play-back built in).

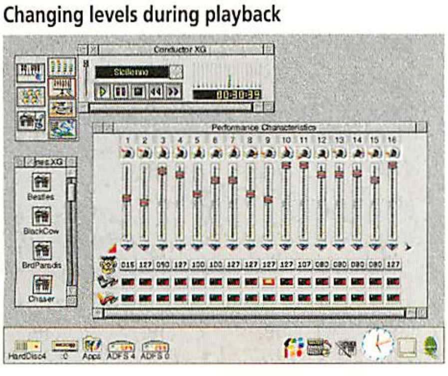
If you already have a DMI50 board, you can upgrade it to 16-bit sound sampling/playback by simply adding a few extra components to the main expansion card. This doesn't involve any soldering as the new bits are just plugged into existing sockets on the main expansion board which is a relatively straightforward procedure. If you just want to sample sound, you can opt for the Control Sampler expansion card which can be upgraded with MIDI and/or PowerWave options.

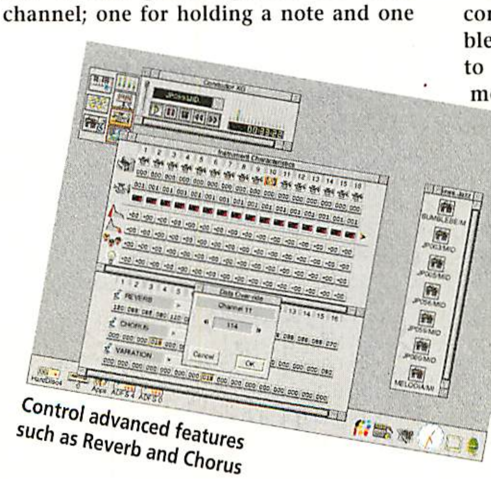
By linking the expansion board to the computer's main circuit board, it's possible to relay the computer's sound output to the back of the PowerWave card. This means that you only need the one connection for sound playback and also allows different sources to be mixed together. Links on the DMI50 board allow you to direct the sound output from a CD-ROM player (if fitted) as well as unfiltered sound from the VIDC chip.

Sampling

Setting up the PowerWave card to sample a noise is easy enough; load up Control (the sample/playback application), set the length of the sample in seconds or by size in kilo-

Changing levels during playback





Control advanced features such as Reverb and Chorus

bytes, set the sampling rate (from 5.5KHz to 48KHz), drag the sample to where you want to store it and then click on record. As long as you have the sound source connected, a sample is then stored directly to the chosen medium. This has the benefit that you can record samples larger than the memory in your computer.

Samples can be played back using the same application which provides similar 'tape' controls to that of Conductor. There is even a comparable Juke Box option which allows you to play back up to ten samples in any order you choose. Quality of recorded sound and its playback is excellent, especially when you've been used to the standard 8-bit output of most RISC OS computers. With the right software, you could even use it for professional recording purposes.

While the playback features of Control are fine, it would be nice to be able to trigger the playback of sounds from say, a sequencer program. Although there is no software to do this at the moment, I would hope that Audio Dynamics is thinking about it for some future release. It's all very well just being able to play back samples but a tie-in with some sequencer would greatly enhance the usefulness of this feature.

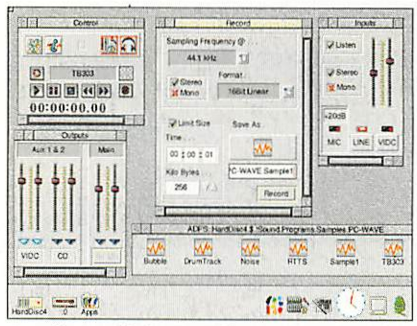
One other thing sadly missing is the ability to edit samples once you have recorded them. There are packages around such as Computer Concepts' AudioWorks which will do the job perfectly well, although this means an additional outlay of a further £49 + VAT on top of what you've paid for your PowerWave system. I'm not exactly moaning about the capabilities of the PowerWave system – far from it – but more software that made use of its features would greatly increase the power of an already excellent product.

In conclusion

To sum up then, it has to be said that the PowerWave sound system is a great way to expand the sound capabilities of your computer. It's not cheap, but the step-by-step upgrade path means that it's affordable.

At the moment, as far as I am aware, there are no other hardware manufacturers producing similar systems for the entire range of Acorn RISC OS machines. You could buy all the parts separately (i.e., two MIDI cards from Computer Concepts, a Lark card or Irlam card for 16-bit sampling/playback and a General MIDI sound module from someone such as Yamaha) but the cost would be far higher and you'd also have difficulty cramming all that in a single-slot machine.

Build quality of the expansion card is excellent which is just as well considering the number of surface-mount components used. The extra cables are well made and should last for a long time. My only two



Sampling audio in Control

niggles are minor and should be cleared up before long. First, the documentation is a little 'rough around the edges' although Audio Dynamics claims that it's still in a state of change and full, printed manuals (rather than photocopies) will be available when the software is finalised.

The other drawback is the lack of serious software to make use of the card's advanced features. Hopefully, both the two areas where it's lacking (sample editing & MIDI sequencing) will be catered for by the release of software packages from third-party developers Oregan Developments – an application to allow advanced editing of sound samples of any length; even up to a full CD's worth (650Mb) so the rumour goes. This should be released very soon, and it's also writing drivers specifically for the PowerWave system.

Another product from Oregan should address the problem of the lack of serious MIDI sequencing software. The as-yet untitled package is hoped to offer similar features to that of Cubase (one of the most popular sequencers available for Atari STs and PCs) and is planned for release in the third quarter of this year.

To anyone who wants to use their Acorn computer for generating real music, the PowerWave is the only answer. People might have dismissed the Acorn platform as unsuitable for musicians, but with hardware like this (and software like Sibelius 7), RISC OS computers deserve their place alongside the rest of the bunch. AU



PowerWave is an ideal partner for Sibelius

Product details

Audio Dynamics, 10 Durnford Close, Norden, Rochdale, Lancs OL12 7RX
Tel/Fax: (01706) 868803

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DMI30
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PowerWave30
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DMI50
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The beat goes on . . .



Fred Grieve looks at the latest version of the best seller, Sibelius 3

Any Acorn user who hasn't heard of *Sibelius* must have been living on the moon. Such has been the impact of this particular package that a significant number of other platform users are sitting up and taking notice of Acorn computers, and not before time too.

The list is quite impressive. Last year the Royal Academy of Music decided to abandon PC-based software in favour of *Sibelius*; a decision which had major implications because it involved the purchase of Acorn hardware in order to use it. This story is quite typical because composers and musicians often require a complete hardware solution, so *Sibelius* has actually been responsible for selling a considerable number of Acorn machines.

Sibelius is described as a music processing package. This means that just as a word processor can lay out a page with text, *Sibelius* can lay out a page with music. Rather than word wrap, *Sibelius* uses bar wrap which ensures that any bar is not split over two lines. Notes can be input from the computer keyboard or from a MIDI instrument and cut and paste editing is possible. Individual notes can be altered by dragging up/down to new positions on the stave and if the 'Play as you click' option is selected, these changes can be heard in real time.

The authors point out that the presentation rules for laying out a piece of music on paper are completely foreign to most musicians; something with which I wholeheartedly concur. The skills of some musicians are far removed from the actual scoring of their compositions but this need not be the case any longer – simply use *Sibelius*!

So why has *Sibelius* succeeded? I think the answer lies both in its attention to detail and its ease of use. For the first time on any hardware platform, musicians can now effortlessly produce music scores which are extremely professional in appearance. The list of users includes the BBC, Royal Academy of Music, Royal Northern College of Music, Royal College of Music, Trinity College of Music, Royal National Theatre and Faber Music.

Sibelius continues to break new ground and has recently been used by the film industry to produce music scores for Loch Ness, Gulliver's Travels (which had its television premiere over Easter weekend) and Richard III.

A new version of *Sibelius* has now been released. Version 3 succeeds version 2.5 and has a number of new features which I intend to concentrate on in this review.

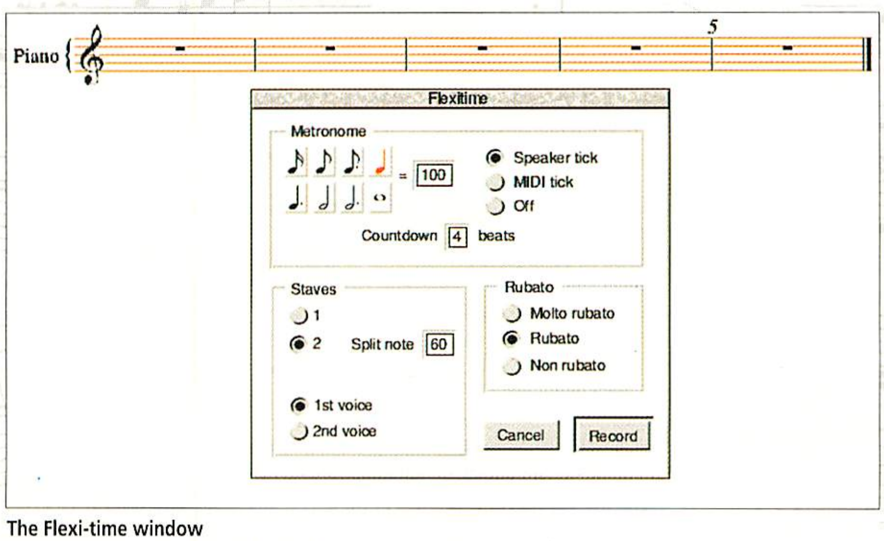
Flexi-time

The major new feature is what the authors describe as Flexi-time. With Flexi-time, anyone composing music using a MIDI instrument can now play directly into *Sibelius* and the software will score it in real time. Unlike most other programs, *Sibelius* does display notes on the stave as they are played and not several seconds after playing is finished.

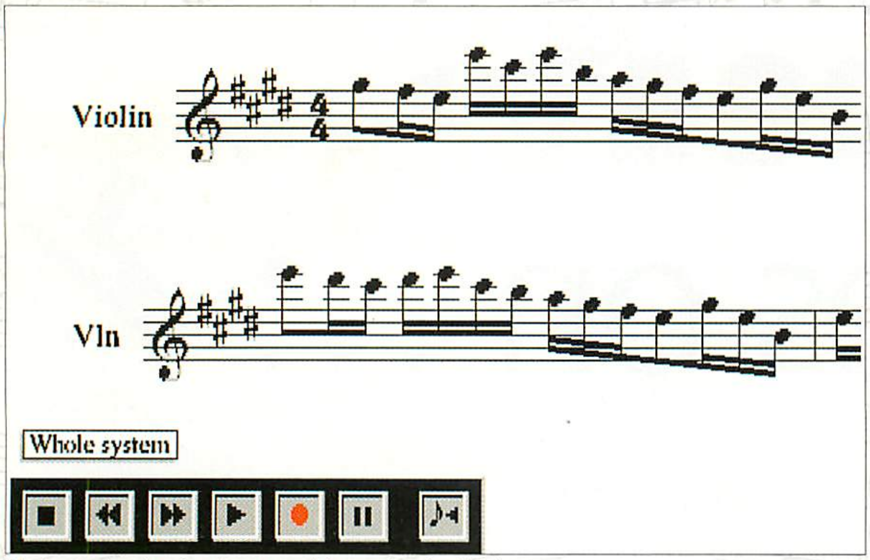
With this latest version, all that is necessary is to create a new stave, set a time signature (if no time is set then the program will assume 4/4), select the stave and then select record mode. A window opens which displays the input defaults. Another new feature, a metronome 'tick', can be switched between the computer audio speaker or the MIDI instrument (providing it is general MIDI compliant), or indeed switched off altogether. The number of bars of count in can be set by the user, as can the metronome speed. Input can be to either one stave or to two adjacent staves, and if the latter is the case then these staves can belong to two different instruments.

The real beauty of flexi-time is that it copes extremely well with note durations and pauses, so the true rhythm and tempo of the piece is captured accurately on the stave. If that's not enough, the Rubato settings permit a certain degree of timing flexibility when inputting a piece.

I quote from the supplement manual: 'Molto Rubato – assumes your tempo is likely to be varying quite a lot. Suitable for inputting rhythmically simple music and for not very good keyboard players.' As a guitarist who can coax something approaching music from a keyboard, I



The Flexi-time window



The button bar showing the notepad button (on the right)

definitely belong to the former group and welcome this feature with open arms.

Chords can be notated in real time and separate voices are also supported, with the first voice being scored stem up, second voice stem down.

Rather uncannily, Flexi-time can follow subtle changes in tempo, so if the player gradually slows down or speeds up then this can be correctly notated, but if the change is too sudden then *Sibelius* will not realise what is meant. Flexi-time is therefore very aptly named.

MIDI Files

Another new feature is MIDI file support but it is important to understand that *Sibelius* is not a sequencer; it is a music notating package which supports MIDI. This distinction is important because MIDI is a file format designed to record and play back music. Apart from note pitches and durations, lots of other information can be held in a MIDI file such as program changes, pitch bending, aftertouch, etc. These MIDI events are necessary for the playing back of music and most have nothing whatsoever to do with the scoring of it. As the main source of MIDI files is sequencers, this means that redundant MIDI control information must be filtered out by *Sibelius*.

There are two formats of MIDI file and *Sibelius* makes a noble attempt at intelligently scoring both types. I say this because it can be fooled. I tried to import a number of MIDI files from a variety of different sources including some created years ago on my Atari ST1040, as well as some files recently found on a WWW site. I had mixed success with both groups.

Flexi-time is also used for MIDI input, so certain rules are applied to the imported file in order to turn it into music notation. For a package that is so quick when updating a music score, I found MIDI import to be sometimes rather sluggish – there can often be an appreciable delay before one of two things happen. If the import is successful then the score is displayed as normal, but if any problems are encountered within the MIDI file then *Sibelius 6* displays an error message and asks the user whether it should continue.

I encountered this several times but in all cases *Sibelius* completed the import and displayed the score, so despite the fact that there were problems, none of my MIDI imports failed completely. One other thing I occasionally encountered was that the MIDI file may contain too many instruments for *Sibelius 6* to cope with (as it has an upper limit of 16 different instruments per score), so importing wasn't even started.

MIDI files can also contain text, so *Sibelius* tries to intelligently deal with it. Titles and instrument names are placed accordingly and instruments are mapped according to the general MIDI standard. This means that if, like me, you have a keyboard that isn't general MIDI compliant, you will probably need to do some further manual editing in order to alter MIDI channel and program information before anything meaningful can be played back.

One other limitation of *Sibelius 6* is that it can only import MIDI files. If you need to export MIDI, or need to score more than 16 instruments, then you will need *Sibelius 7*.

Other new features

Flexi-time and MIDI file support are the two 'biggies' but there are other new features worthy of mention.

Sibelius now understands repeats and can cope with first and second time bars. This latest version also understands dynamics such as hairpins or text expressions. Pedalling for piano parts is now supported so if pedalling is marked then this will be played. Strings parts which contain pizzicato, tremolo and arco marks will also now be played. Tenor sax and various brass instruments are automatically shifted into the treble clef when extracted and any clef changes in the score are removed.

Keyboard macros for adding ties/slurs (thank goodness!) and for adding extra bars have been included, and the note grouping for automatic beam creation has been improved. Automatic file saving at predetermined intervals is now possible, and stave handling has been enhanced.

Perhaps one of the more instantly noticeable changes for an existing user is that the button bar control panel now has an extra button. The notepad button is used for inserting an extra blank page at the beginning of your score, and this page can then be used for trying out things before placing them on the main score. Cutting and pasting between the notepad and the main score is possible and indeed, anything that can be done in the main score can be done on the notepad. Instant jump between any page of the main score and the notepad is possible by selecting the notepad button.

The one final improvement worthy of mention is that playback has been greatly improved. Complex pieces no longer 'stutter' when being played back.

Conclusion

Sibelius 6 users can upgrade to version 3 for £49 + VAT and at this price all existing users should upgrade immediately because both Flexi-time and improved play back are reason enough for so doing.

I think the complete *Sibelius 6* package represents incredible value for money anyway and with the addition of Flexi-time and MIDI file handling, *Sibelius'* ease-of-use and flexibility is greatly enhanced. Rather than resting on their laurels, the Finn brothers are working hard to improve their award-winning brainchild and evidently intend to keep *Sibelius* moving forward into the next millennium. AU

Product details

Product: Sibelius version 3
Version Reviewed: 3.02h
Authors: Ben & Jonathan Finn
Cost: Sibelius 6 £179 + VAT, Sibelius 7 £888 + VAT, Sibelius 7 Student £495 + VAT
Supplier: Sibelius Software
Address: 75 Burleigh Street, Cambridge CB1 1DJ
Tel: (01223) 302765
Fax: (01223) 351947
E-mail: info@sibelius.demon.co.uk
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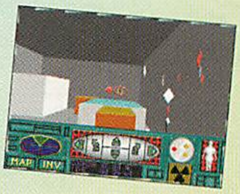
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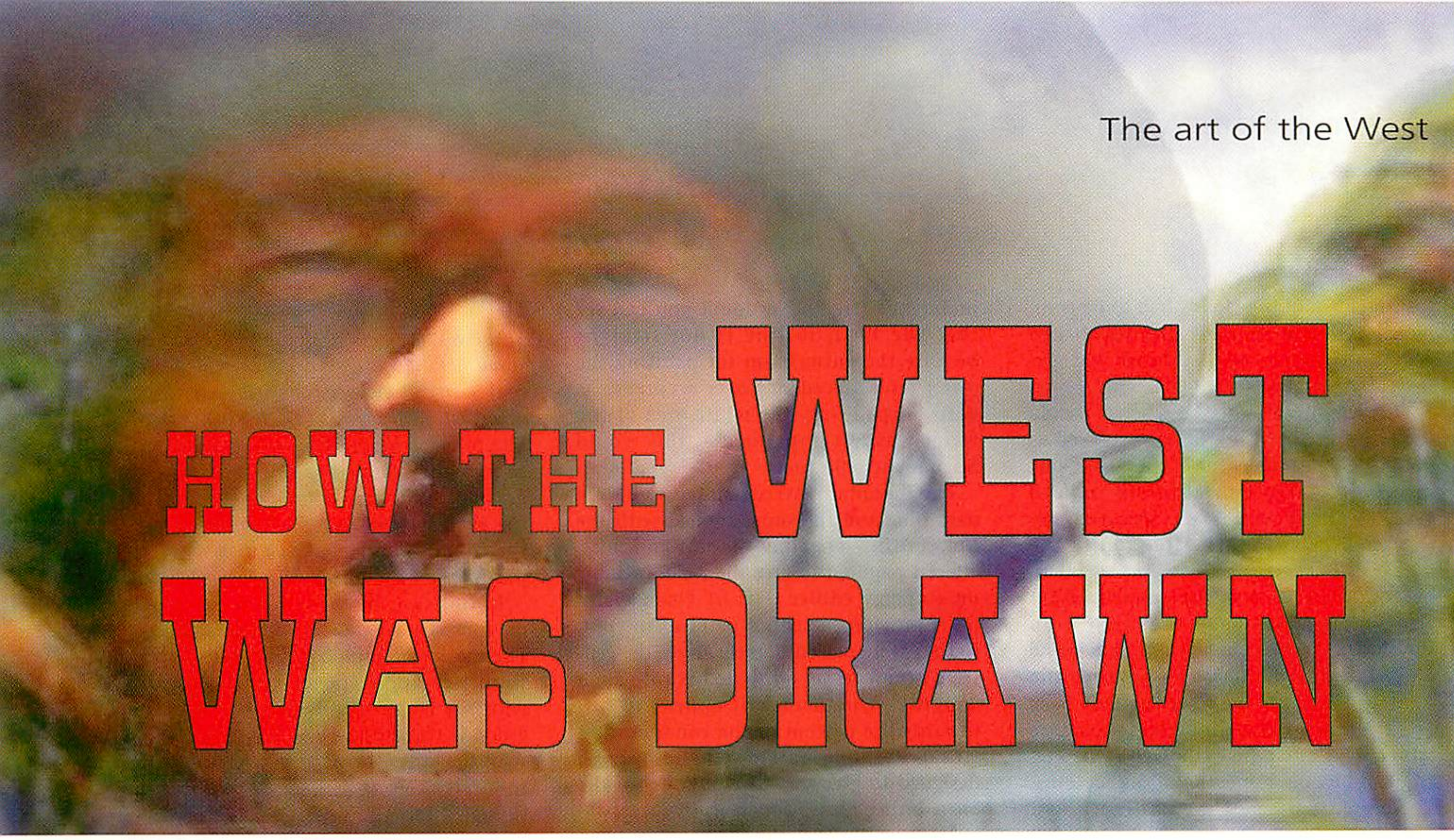
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HOW THE WEST WAS DRAWN

In the second part of this series, Walter Briggs creates another 'Western' picture, this month using Photodesk 2

The 'West' is getting wilder as I continue to create diverse illustrations with the various packages. The next software to begin the trek across the great American continent is *Photodesk 2*. But because I'm trying to become familiar with a number of packages, problems are occurring as I try to use tools in the way another package would use them. But nevertheless, it's great to see the variety and diversity of such software.

Since I am using an early Beta version of *Photodesk 2* there are some problems so, rather than mention them, I will give them the benefit of the doubt and assume that a simple problem is a 'bug syndrome' rather than a deficiency in design.

The 49'ers

The second article in this series, as promised, follows the same format as the first, so this issue will be about the famous 49'ers – the gold-rush miners of California, willing to sacrifice all in their endeavour to become prosperous owners of the precious saffron metal.

I wanted the backdrop to be of the majestic Rockies and the detail to be a 'grubby' miner. I also wanted to include a Grizzly bear – unfortunately, and disappointingly, *Photodesk* was not as undemanding as I had hoped, despite being familiar with version 1. This meant I just did not have the time to include the Grizzly – perhaps he'll make an appearance in a later issue.

Airbrush control

There is great praise for *Photodesk* – and rightly so – its airbrush can be used with the paint control enabled that is when **Select** is held down and the **Stream** is switched on the paint will continue to flow, the usual state for an airbrush, or if **Stream** is off, the paint will only be applied if the airbrush moves.

The preference of having the **Stream** off, which prevents a build up of paint at the end of a stroke, may help those who are unfamiliar with the airbrush. The problem is more basic than this – trying to 'pull' a long smooth line in one operation produces a 'blobby' affect as the airbrush vainly tries to keep up with quick brush stroke. To have this effect eliminated by having a **buffer on** means the airbrush lags about 2 - 3 inches behind the mouse! Having said that, the 'mountain scene' came out rather well – if a little blurred.

Brushes 1-5



Spacetech have confirmed that a lot of work has been done on the airbrush for the release version. I used the same airbrushes as with *Studio 24 Pro* (see last month's issue for a discussion of these). See figures 1 to 5.

Mountain air

The second brush in the column was used to create the 'fluffy' clouds, (Fig.6) painted in a circular motion. It's always a good idea to work with an action that follows the shape of the image you are working on. This means if there is any skipping of the tool, the missing colour will not be so apparent. The traditional brush would probably be a 'fan' brush and only the corner used on the canvas, though in a similar motion.

To make it a little easier, I was working on a sky that was a blend of colour – from pale blue at the horizon to a darker variation of the same hue at the top, to give the impression of early morning. There seems to be a bit of a step in *Photodesk* when varying the opacity – from very little to

Figure 6



FEATURE

too much – and the clouds had to be completed with the 'normal' airbrush-shaped nozzle because the original brush was giving a sharp edge to the clouds.

This would normally be where I would use the 'smear brush. The tool worked as predicted, but rather slowly that it became almost impossible to generate smooth sweeps with the tool. Again, Spacetech say this has received much attention in the latest version. The way it works seems to be by slowing down the instrument, and it also appears that the 'mouse' itself is on the slowest setting, meaning it has to be moved a great distance to produce the smallest stroke. I found using this very useful implement an inhibiting exercise rather than one which allowed swift creation of blending and smoothing colours. Therefore, it was not used as much as I would have liked.

The 'landscape' continued, using the airbrush more through necessity than preference (Fig.7). No doubt you can see that the horizon line is not straight because the enthusiasm for painting the water took precedence over accuracy. As with oil painting, the white area of the water was left unpainted – this would become the reflection.

The mountains were painted as a very dark blue and the snow applied with the No.3 brush – enabling the 'hit and miss' effect I required to give the random snow on a craggy edifice (Fig. 8). Once again, these provided a central point of interest, so they were placed slightly above the centre of the canvas – this is because such weighty structures will appear to fall towards the bottom of the canvas unless situated above half way. The brush I designed to give the 'palette knife' of the oil painting ilk was once again successful in creating not only the snow, but also the shadows.

Tree planting

As time was becoming compressed, I didn't smooth the foot hills but decided to cultivate some trees to hide the abrupt end to the Rockies. Furthermore, the brush sprite which contrived to simulate a 'fan brush' (brush No.4), proved just as versatile in *Photodesk* as previously in creating the foliage of deciduous trees (Fig.9).

The canvas was worked as if it was a normal oil painting, and the brush loaded with various 'greens' and simply 'dabbed' following the desired shape of the tree, which is at the discretion of the artist. As I had originally planned a 'grizzly' or perhaps a miner panning for gold, the centre of the composition was left open in the centre foreground, and the trees used as a frame for this character (Fig.10). As this was not possible, the canvas does appear a little bear (pun intended) in the foreground, but would be rectified later.

How *Photodesk* pans out

To give *Photodesk* a chance at producing some detailed illustration, I decided on a real scruffy, craggy, character with the greed filled face of a 'Gold Rush 49'er. I like to work by starting with a prominent feature and working that to a finish, then gradually moving out from there, completing each section as I go, thereby keeping the colour and perspective as accurate as possible.

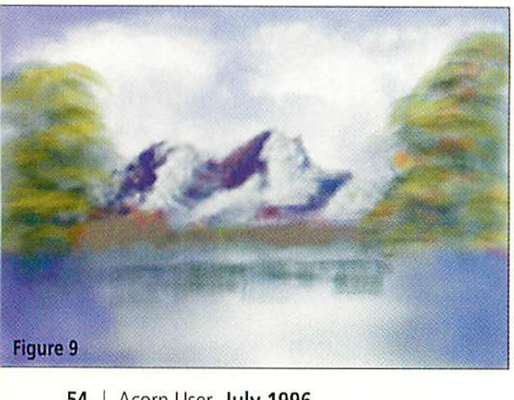
In this case, it was as plain as the nose on your face where I should begin (Fig.11). The mask (the pink background) was very simple to apply, just a case of clicking with the magic wand on the white background. The outline had been sketched in with the airbrush, set with a high opacity, then cleaned up to leave the outline – though I left the line too thick and had difficulty covering it with the colour opacity set low as I do when using the airbrush.

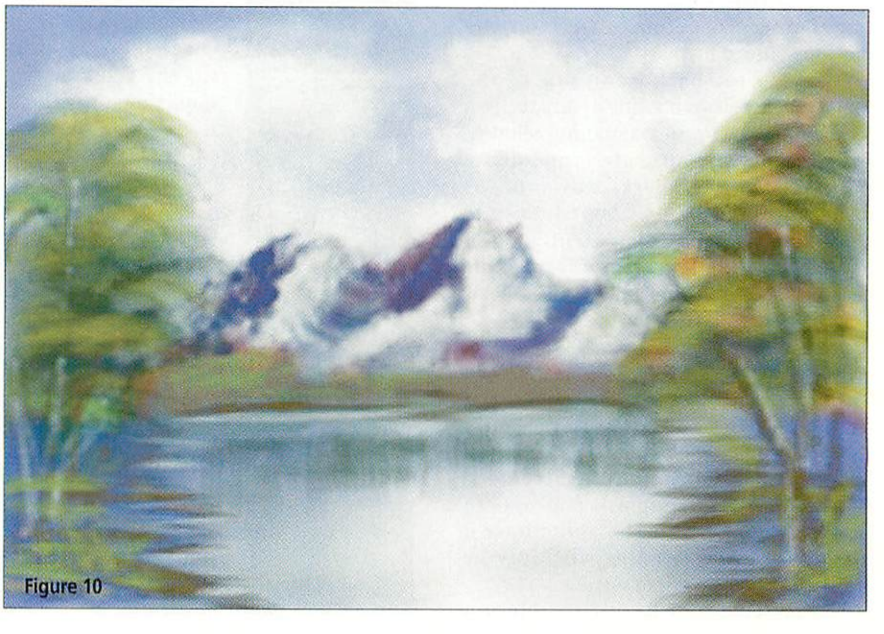
The pigment needs to be added very gradually to enable colour to be added without losing the shape or form beneath. Usually, I apply the light colour first then add the shadow gradually, therefore maintaining the luminosity of the particular attribute. With *Photodesk* I found that I needed to work the features a lot to get the coverage, and found that the colours began to lose their vibrance.

The beard particularly lost its detail as I tried to blend the multitude of hues into a realistic 'chin bush' (Fig.12). Still, I wanted a scruffy looking rogue, and as the portrait progressed and the hat was added, the 'miner' grew in character. The face hair would normally have been done with one of the 'special' brushes, but I found the airbrush was the best for indicating the individual hairs, although the opacity needed to cover the underlying pigment meant I had to paint the bristles a little too thick.


Figure 7


Figure 8


Figure 9


Figure 10

Trying to blend the lines into a coalescent whole blurred the beard a little too much, but the main priority was to maintain the sunlight and rich shadow that coloured the grimy face (Fig.13). The long hair added to his villainous air, and the grimace took on a genuine leer, just as I had envisaged the seedy 'gold digger'.

Adding the neckerchief and the 'buck skin' jacket brought out the colour in the face which had lost the vividness of the weather-beaten pigments (Fig.14). The finished painting, though lacking the fine detail, was an acceptable portrait of a native mountain mole, a shabby unwashed millionaire.

All that was left now was to compose a finished picture that would conjure up the essence of the 'wild' west (Fig.15). The process was, as in the first article, a case of cloning the face onto the mountainous scenery. The clone option in *Photodesk* is now excellent. It gives a reference point to see where you are cloning from and the ability to adjust the opacity of the brush, which works like an airbrush – and, surprisingly, it seemed to work better than the actual airbrush tool (though this may have been an illusion – as I was applying varied colour and not a single pigment). As an artist's tool I found *Photodesk* a bit harder to use for creative work, not because it is so bad but because it excels so much in other areas. AU



Figure 11

Figure 12

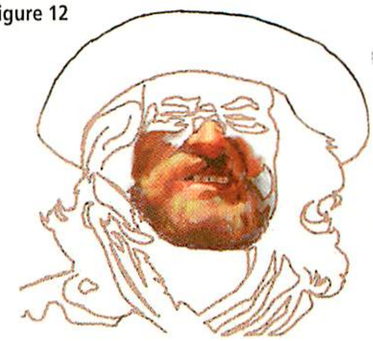
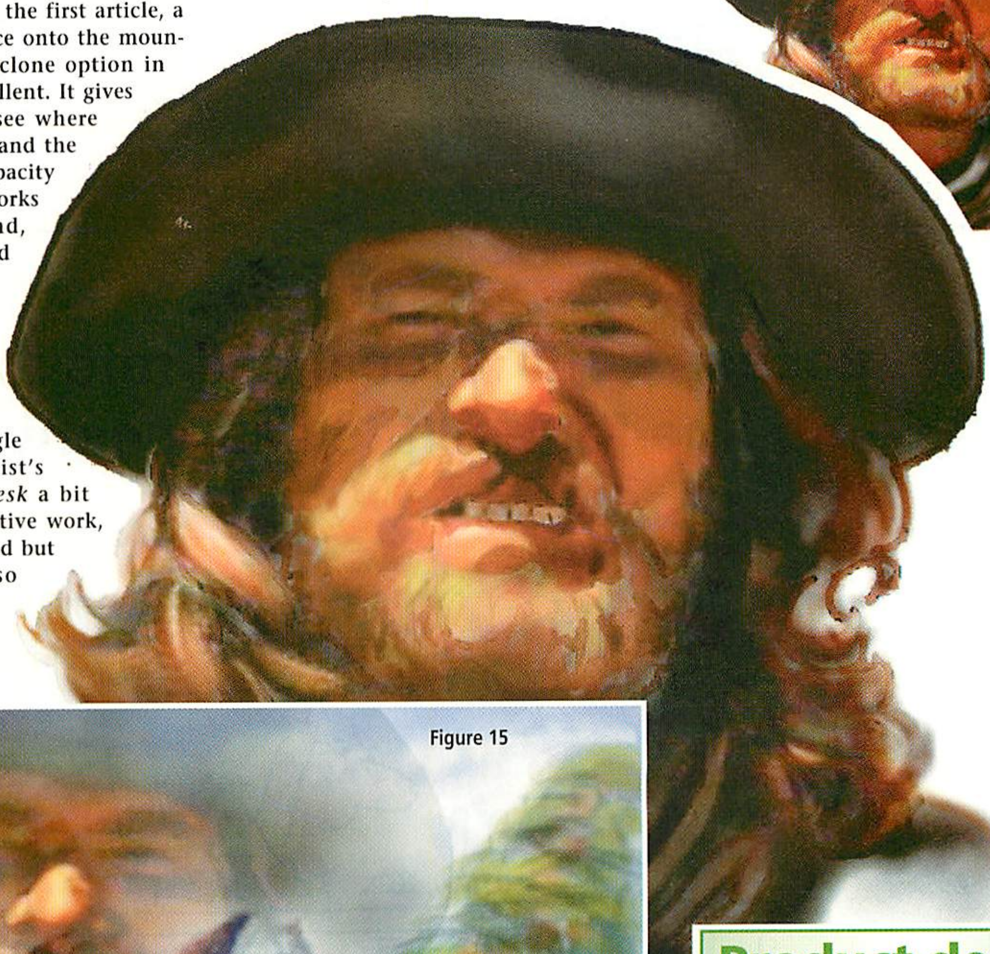


Figure 13



Figure 14



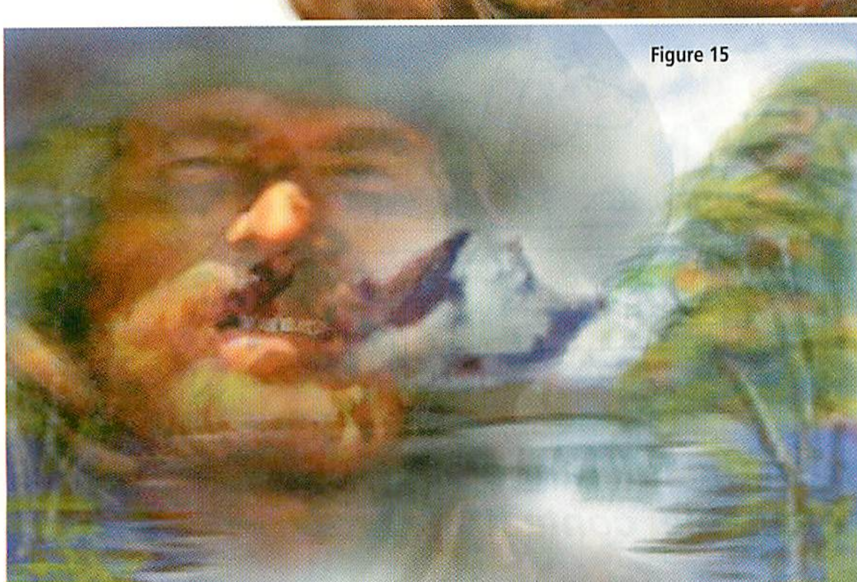


Figure 15

Product details

Product: Photodesk
Supplier: Spacetech
Address: 21 West Wools, Portland, Dorset DT5 2EA
Tel: (01305) 822753
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E-mail: sales@spacetec.demon.co.uk
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GAME SHOW

Welcome to another Game Show. If you've been reading the Acorn Games newsgroup on the Internet recently, you'll have seen the large number of posts announcing the development of new games, or asking for ideas to make their own piece of work that little bit better. Admittedly, I've yet to see finalised versions of many of these, but even if only half of those prospective titles make it from the drawing board onto the disc, we'll have a rich crop of games to choose from in the near future.

On the subject of new games, I've just found out about a product being developed by Software 7, due for release later this year. It's called *King and Country* and it's a strategy game dealing with medieval warfare – starting with a small group of soldiers and a castle, it's up to you to make use of your local resources to fortify your stronghold and increase the might of your army. In the later levels, you'll be able to train druids to heal your troops and mages to add a little spice to the battles in the form of magic.

From what I've heard, it sounds as if it'll be a game to watch out for. I'll pass on more details as soon as they arrive. If you'd like more information, Software 7 can be contacted at software@digibank.demon.co.uk or 15 Stewarton Drive, Cambuslang, Glasgow G72 8DF.

Finally, I think it's time some sort of forum was created to allow you to discuss what sort of games you want to see – if you've got any imaginative ideas roaming round your mind, put them down on paper and let me know. A word of warning though; if you're writing your own game for public release and you find some clip-art that you want to include, you *must* ask the original artist for permission to use it.

Global update

I've been contacted by GURU Developments, the team behind the conversion of *Global Effect* to the Acorn, and it's been kind enough to inform me of a keyboard shortcut in the game that makes tool selection much easier. By default, the first 12 tools have been set up on function keys F1 to F12, allowing you to select them by the press of a button. However, you can also customise them for your own needs by selecting the tool you want in the usual manner, holding down Shift and pressing the function key of your choice. It's a particularly welcome feature because the constant flicking through the toolbar was beginning to drive me to distraction.

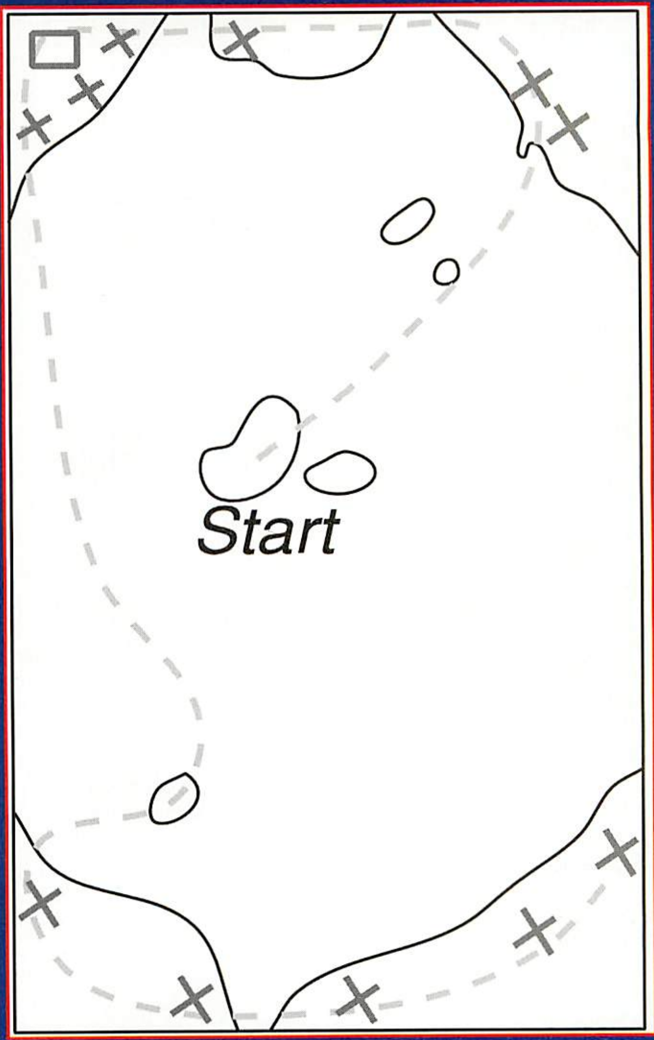
Global Effect was GURU's first project in the Acorn games scene, but Paul Cherry of GURU has told me that there are more new ideas waiting to be completed. Let's hope they come to fruition – I'll let you know as soon as I receive any more details.

Getting out of the Deep End

If you've been struggling to complete the 'In at the Deep End' level in *Cannon Fodder*, Nathan Atkinson has some advice for you – take a look at the enclosed map for an effective route. Starting on the island, prepare to use your rocket and swim to the small island. Immediately fire a rocket between the two guns there and swim over to collect the rockets at the top, right after the debris has settled. Now fire a rocket to the far left to destroy the enemy gun – don't worry about your own gun being obliterated.

Run behind the metal building and use this as shelter while you deal with any enemies still there. Lob a grenade at the other gun there and nip back to safety while the air clears, then take a swim to the island in the bottom half of the screen – stay in the shallows there as you fire a rocket at the gun. You can then walk onto the island and destroy the other gun there with another rocket, before swimming left and tackling the men on the island to your south. After that, it's just a question of throwing grenades at the remaining guns, and you're home and dry.

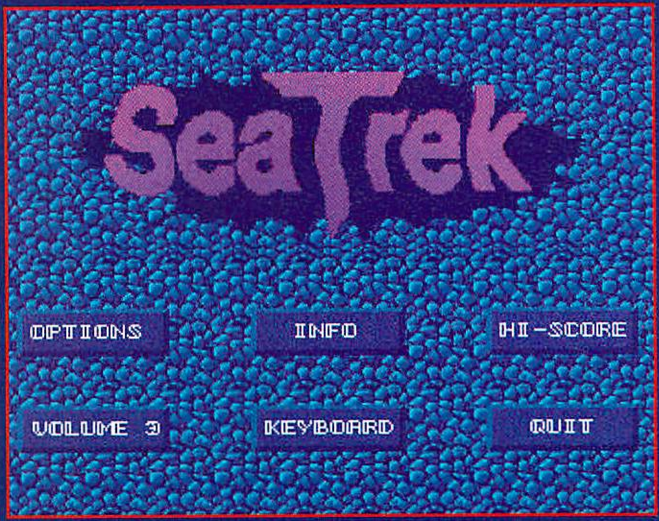
Thanks to Nathan for his battle plan. If you've got any strategies you want to share, write them down, send them in and I'll put together a hints guide.



Getting out of the deep end

A drop in the ocean

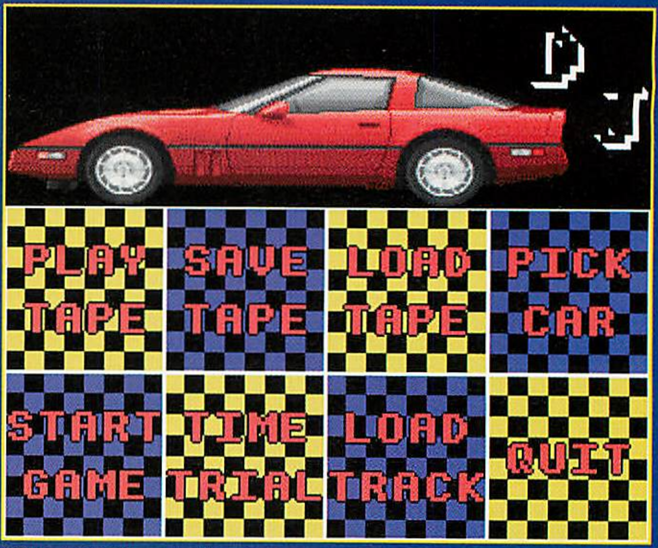
Following on the heels of *The Last Cybermoch*, *Sea Trek* is Generation Design's latest budget release – the scenario sees you in control of a futuristic submarine, and your mission is to dive into the heart of the Bermuda Triangle on a search for treasure. Each level takes



Generation Design takes a dip



Sort of an inverted thrust



On the track all you get is a stock car

place over several screens and you must guide the sub down towards the sea bed, avoiding lumps of coral that are scattered liberally throughout. Due to the fact that your craft is positively buoyant, it will float towards the surface when left to its own devices, so you have to make judicious use of the downwards thruster to maintain your position.

After you've mastered the controls, it's just a question of finding the coins hidden on each level – this is fairly tricky due to the size of the playing area, and the fact that you've got a limited amount of oxygen available to you. Luckily, picking up the next coin replenishes your supply, leaving you free to carry on your search. The later levels add extra twists such as switches that need to be shot to reveal the coins, invisible coral and the like.

The graphics aren't particularly enthralling – the futuristic submarine is surprisingly featureless – and the sensation of movement is damaged by incorrect parallax scrolling. When you thrust left or right at the surface, there's no visible indication that you're moving at all, and once under the surface there's a disconcerting change in scrolling speed when your craft nears the edge of the playing area. Overall, *Sea Trek* provides enough features to keep you occupied for a while, but don't expect any sweeping changes in gameplay or large end-of-level guardians.

Sea Trek sports a Risc PC mode for full-screen play on the high-end machines, and an application is provided to take care of the memory management on one megabyte systems. Generation Design can be contacted by e-mail at genden@argonet.co.uk or by post at 2 Whitecliff Gardens, Blandford Forum, Dorset DT11 7BU.

Out for a spin

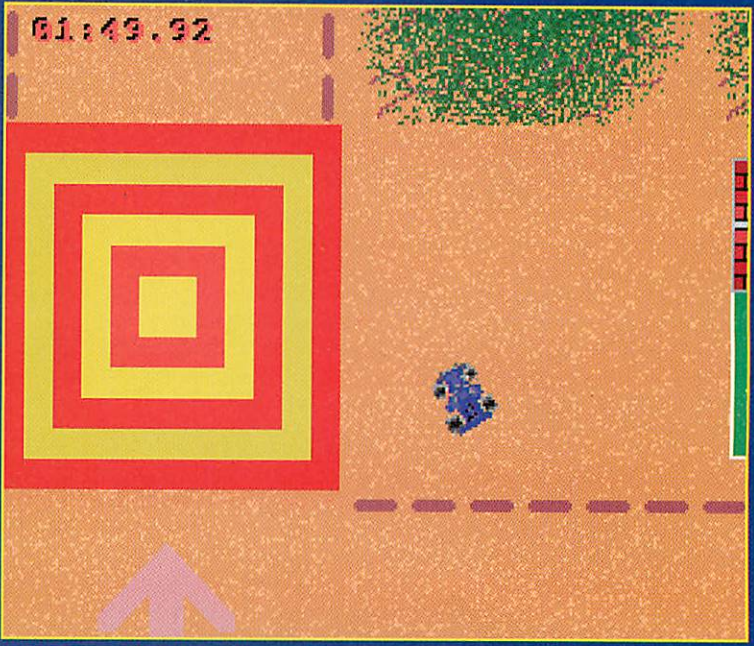
David Johnston has just sent me a copy of his latest game, *2121 Racing*. It's a little similar to *Stock Car* in its approach, although the tracks are much larger. There are four cars to choose from, each having its own characteristics in terms of acceleration, maximum speed and handling – there's not much between them in looks though, so if you're looking for a sporty model in metallic green, you're out of luck.

Unlike some racing games, the edges of the track aren't tightly defined; instead, the road is marked on either side and it's up to you to stick to it. There's no speed decrease if you decide to shoot off into the wilderness, but you can only complete the track by driving over the various checkpoints dotted about – if you've found a short cut, feel free to take it. You'll find water hazards and jumps aplenty; hit the latter at the wrong speed and you'll find yourself overshooting your target and landing in a bush, or flopping dismally into a lake.

I would have liked to have seen a head-to-head mode where two or more players could race together; it's possible to race against a 'ghost car' that follows a course recorded by another player, but there's something to be said for being able to ram your opponents off the track – in the nicest possible way, of course. A track editor is included with the package, so you can make your own courses as twisted or as simple as you want.

2121 Racing isn't as sophisticated as some of the other overhead racing games I've seen and the graphics wouldn't win many major awards, but there's enough playability there to last a fair while, especially if you're prepared to design your own tracks.

The game costs £6 and is available from David at 70 Norse Road, Scotstoun, Glasgow, Scotland G14 9HT. You can also contact David by e-mail using deejay@stac.ac.uk.



2121 Racing – a lorra lorra fun

Inform 6

Graham Nelson shamelessly plugs his own program

As the computer game industry slides into Hollywood, and into three-act films starring actors you've almost heard of, it is easy to feel that the days when single people could write games are over. Even the meanest shoot-'em-up needs the services of a graphic artist.

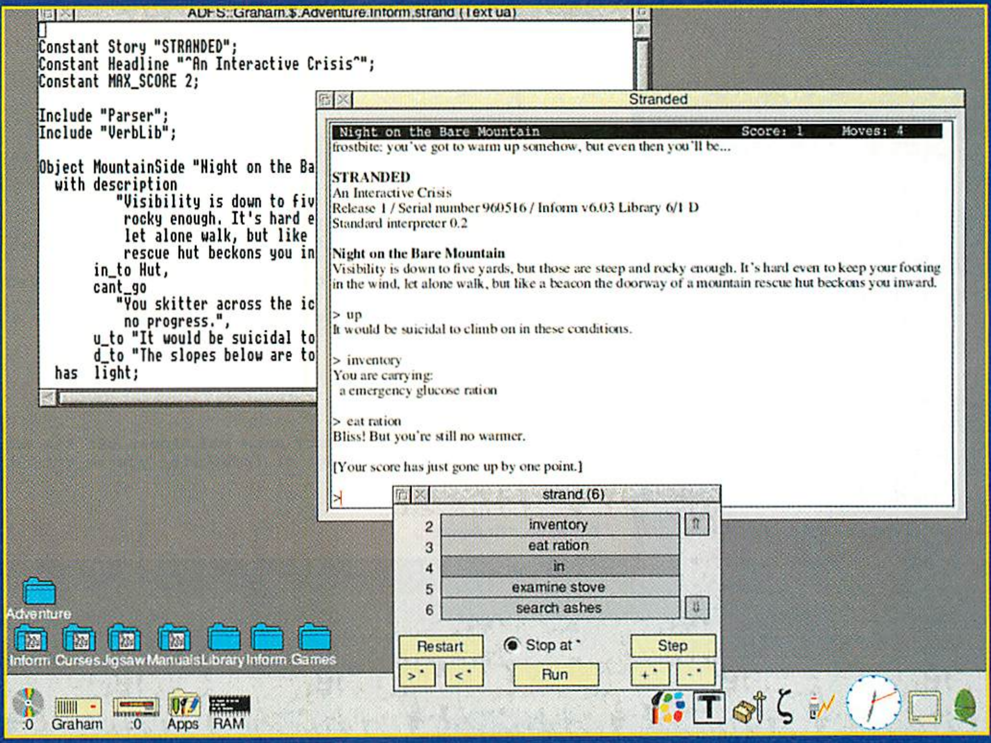
Because adventure games are textual, they need no budget – no video clips, no animations, no pictures, no music. But they're far from being no effort to program. To get an adventure game working is a lengthy exercise: there are standard rules about rooms and directions, moving the player, picking things up and so on. A really good implementation can take months before a single interesting feature of the game appears.

Consequently, adventure games are ideally suited to that traditional utility, the game construction kit. Many such design systems have been written, and about three are in popular use across the Internet today. The state of this art has advanced dramatically over the last ten years.

What all the main design systems agree on is that a point-and-click, WYSIWYG approach is not good enough – the full gamut of puzzles and traps can't be expressed just by dragging icons onto some prototype picture of a game. There's no getting away from the fact that an adventure game is a program, and what is needed is a programming language!

Inform 6 is the latest version of what is now the most widely-used adventure design language in the world. This month's CD contains everything needed to get Inform going. There are no fees to pay: Inform is free, so you can't fault it for value for money. It compiles about 1000 program lines per second on my Risc PC, and it can be used to write anything (not just games).

Inform produces 'Infocom format' game files rather than native ARM code. These files are portable to almost every machine in the world, from a Psion lap-top to a Java machine to a VAX mainframe. All you need is an interpreter program to play Infocom game files: for RISC OS, I recommend Kevin Bracey's excellent *Zip2000*, also on this month's CD.



Testing an Inform game

Objects and Classes

An adventure game simulates an imaginary landscape, or map, connected together by compass directions, and containing a variety of items. Inform's world is entirely made up of 'objects': each different place – or room – is an object, the player is an object, and all the items the player might pick up or manipulate are objects. Objects are also sometimes used to represent abstract ideas such as 'darkness' or 'the direction north west'.

Inform programs are lists of objects to make, together with a few routines to get the game running. Since it often happens that a whole group of objects will be similar in nature, the Inform programmer can choose to save time by specifying a 'class', a kind of template to make objects from, like a master page in a DTP program. For instance, if a game contains 15 valuable treasure-items then it's probably worth gathering all the rules about treasure together into one place, into a Class definition.

The world model

Inform comes with a standard Library of code to define all the natural 'world model' rules. This Library can quite easily be edited or changed, but the idea is that a game designer should never need to do this.

These rules govern the movement of the player, the description of surroundings, what can be done with items of different kinds, and so on. Some items are edible, others are doors or doorways, containers or 'supporters' like tables which can hold things up, and so on. The devil is in the detail. For example, if the player is sitting inside a lockable container which is currently locked, such as a cage, it seems reasonable to forbid the player from travelling east – but what if the item is

```
Constant Story "STRANDED";
Constant Headline "^An Interactive Crisis^";
Constant MAX_SCORE = 2;

Include "Parser";
Include "VerbLib";

Object MountainSide "Night on the Bare Mountain"
  with description
         "Visibility is down to five yards, but those are steep and
          rocky enough. It's hard even to keep your footing in the wind,
          let alone walk, but like a beacon the doorway of a mountain
          rescue hut beckons you inward.",
       in_to Hut,
       u_to "It would be suicidal to climb on in these conditions.",
       d_to "The slopes below are too slippery without an ice-axe.",
  has  light;

Object Hut "Mountain Rescue Hut"
  with description
         "Sanctuary, for a while, but the loosely-pitched planks barely
          even keep out the wind.",
       out_to MountainSide,
       cant_go "The only door leads out onto the blizzard.",
  has  light;
Object -> "dilapidated stove"
  with name "stove" "oven" "heater",
       initial
         "The old stove in the centre of the room contains only ashes.",
  has  static open container;
Object -> -> "ashes"
  with name "ashes",
       before
       [;  Examine, Search, LookUnder: <<Take self>>;
       ],
       after
       [;  Take: deadflag = 2; score = score + 1;
                "The ashes fall through your fingers, leaving a magnesium
                 flare!  You are saved after all.";
       ];

Object ration "emergency glucose ration"
  with name "emergency" "glucose" "ration" "food" "mars" "bar",
       description
         "Looked at more closely, a Mars bar with a long-gone use by date.",
       after
       [;  Eat: score = score + 1;  "Bliss! But you're still no warmer.";
       ],
  has  edible;

[ Initialise;
  location = MountainSide;
  move ration to player;
 "^^^The wind shaking powdery snow and stones off the mountain, an unending
  darkness, the sharp twinge of frostbite: you've got to warm up somehow,
  but even then you'll be...^";
];

Include "Grammar";
```

Titles and maximum score

Telling Inform to add the standard library

This object provides light to see by

Names the player can give it

An attempt to Examine the ashes causes a Take action instead

Rule applying if successfully taken

Starting the game

also a vehicle under the player's control, such as a tumbril?

Likewise, a long list of rules is needed to convincingly answer the question of whether one object can be put inside another. As a final example of the pitfalls in simulating a whole world, how can we tell if there's enough light to see by? Imagine the player is carrying a luminescent goldfish in a jam-jar of water. What should happen if a passing bird eats the goldfish? Or if the jam-jar is put inside an opaque box which is then shut?

The Parser

The other main element in the Library is the ingenious Parser. Its job is to understand what the player types in, which is written in English, and to translate that into a much simpler language, a sequence of 'actions'.

An action is a request for something to happen, and is summed up by its type (such as Take) plus, usually, one or two objects. For instance, the text 'pick up the yellow paper-weight' might be translated to an action of Take applied to the paperweight-object.

The Parser understands far trickier instructions: 'put the coins on the table', or 'drop all but the black rock', or 'Frodo, give me the ring'. Beyond this, a major feature of Inform is the ability to modify and extend the parser. For instance, the Parser can be taught to understand 'type 4.587', 'dial 071-222 45' or 'set alarm clock to quarter past seven'.

Rules before and after

So far we have a simulation, but not much of a game. The interesting features of a game – such as an unexpectedly spring-loaded trapdoor, or a cake with a file baked into it – all need exceptions to the standard 'world rules'. The standard rules would say that the cake should simply be removed when eaten, whereas we want, instead, to print something like 'You almost break a tooth on a hard metal object!' and to bring a file-object into the game to replace the cake.

Exceptional rules like this apply when actions are being considered. In this case, the action is *Eat* and is applied to the cake-object. Actions can be modified either before the desired event happens – that is, when the Parser has worked out what the player wants – or afterwards – that is, after the cake-object has actually been consumed – to modify the result. In this example, an after-rule would be suitable, but if the cake was, instead, to have the property that it can't be bitten into because it is frozen solid, then a before-rule would be better.

Timers and Daemons

The player, typing requests in, is not the only person who causes events to happen. The game itself is probably playing the part of other characters in the story who may be moving around, picking up items or something else. These events are caused by 'timers' and 'daemons' and any object in the game can have one of these.

The classic example of a timer is a bomb. Once the fuse is lit, the timer 'goes off' ten turns later which causes a routine of code attached to the bomb-object to be run. This routine prints out a suitable 'Bang!' message and takes care of sorting out the results (for example, destroying everything in the vicinity).

Daemons are imagined as being spirits hovering over the game, meddling in the affairs of the player now and again. An object with a daemon attached can act out a part in the story, for instance, other people are usually implemented as objects with a daemon attached.

However, daemons are also used for working machinery or for applying complicated rules to the game. A rule such as 'if at any time the canoe contains more than 10 items, it must sink' might well be provided by a daemon attached to the canoe.

Competition

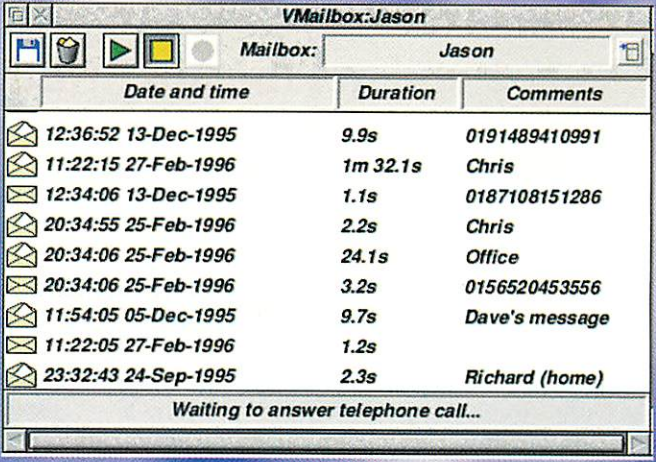
There's no space to go further into what Inform can do, so look at the example games. Better yet, enter the *Acorn User Interactive Fiction Competition*. Write a short adventure game on any theme, without infringing anybody's copyright, and send it to us (with a file containing the solution) at *Acorn User* by 1 August. Note that the deadline has been extended now that we have been able to publish Inform widely! We hope to be publishing the best entries.

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E & OE

Redressing the balance

Looking back over the last year's issues of *Acorn User*, there has been an embarrassing lack of Pocket Book coverage in the education section, which is a shame because it's a very capable tool which, as I hope to demonstrate, can be used through most Key Stages to cover almost all of the National Curriculum Attainment Targets for Information Technology.

This month we feature lots of Pocket Book news and reviews and on the cover disc are a few files which may come in handy. Special thanks goes to Mark Taylor, *Acorn User's* Portables Editor and Geoff Stilwell.

Why the fuss

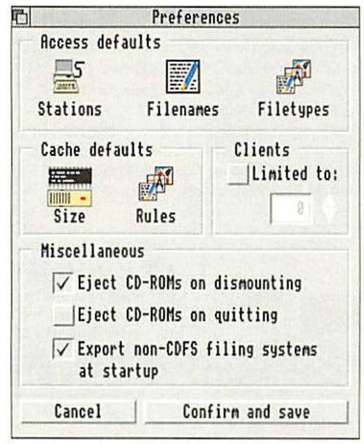
The Acorn Pocket Book is effectively a re-badged Psion 3 (or Classic as it's now called). About 18 months after launch, Psion introduced an enhanced version called the 3a which Acorn re-badged as the Pocket Book II. The Acorn version is currently available in 256K or 1Mb versions with several in-built applications including a word processor, database, spreadsheet and graphing program.

It's battery powered, making it truly portable, but has a socket to plug in the optional external power supply. In addition to the main memory, there are two 'drives' for solid state discs (known as SSDs), and into these can be inserted either a ROM cartridge, a battery backed RAM cartridge or a Flash RAM cartridge which requires no battery backup, but is not quite so easy manage. There is just one port available: a six-pin socket into which can be plugged all manner of devices including a printer, modem, measurement sensors and probably most important of all, a lead enabling it to be connected to a desktop computer.

This is known as the A-Link, (there's also a PC-Link and a Mac-Link) and includes a program called *PocketFS* which enables software to be moved between Pocket Book and RISC computers. One might think that such a heavily used socket would soon be damaged beyond repair by careless hands continuously plugging and unplugging, but not so. This port has been very carefully designed and is probably as robust as it's possible to be. I wouldn't care to call it indestructible, but you'd have to try very hard to damage it.

One computer per child? I don't believe a Pocket Book could (or should) replace a desktop computer, but there are schools around the country that own large quantities of Pocket Books. The education price of a single 256K version is now £195+VAT, but Acorn will supply bulk packs of 100 to schools and colleges for £19,000. (That price includes 10 desktop links, 10 parallel links for connecting to printers and 10 PSUs.) Or, if you're really serious about every student in school having one, 1000 Pocket Book IIs will cost £182,500 which includes 100 sets of support peripherals.

How could a child use one? If every child in the school had a Pocket Book, the school would only need to supply some printers and a relatively small number of desktop computers. Children could take their Pocket Books into lessons and, where appropriate, work could be entered directly into it or installed programs could be used to help investigations.



Select 'Export non-CDFS filing system at startup. This will enable all non-CDFS discs to be exported including hard discs and a RAM disc

The Pocket Book could then be taken home where the work could be developed. If necessary, work could be transferred to a desktop computer (if available at home) and developed there before being ported back into the Pocket Book where it could be taken back to school.

A printer could then be connected and the work printed out. Alternatively, it could be connected to one of the school's desktop computers and the work ported into that either for saving or for further development. With all the applications on board, and others which are widely available, the Pocket Book II could play a valuable part in almost every lesson.

Pocket Books can be used to meet most IT needs across the curriculum, but do not replace desktops: they work with the fixed infrastructure, acting as a mobile data-capture device and personal tool. This is a very powerful learning environment, with appropriate tools working together: the Pocket Books provide a huge increase in access to IT for learners and teachers without stretching the budget.

Contacting me

You can contact the Education page by writing to me, Geoff Preston at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: aueduc@idg.co.uk

Tip for the month

The user will be presented with the usual list of CD ROMs plus the Pocket Book icon which, when clicked upon, will give the contents of all current Pocket Book 'discs'

AS I didn't have room on the Network Page, I'll put TftM here. If you have a network and you serve CD-ROMs across it using Cumana's *CD Net2* you'll also be able to export documents from a Pocket Book II. You'll need to enter the operator's password first to gain full access to *CD Net2*.

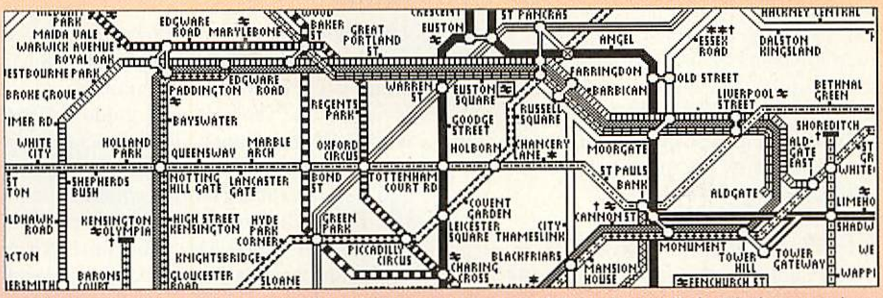
Install *PocketFS* on the computer running *CD Net2*. From the *CD Net2* application menu, choose Preferences..., select 'Export non-CDFS filing systems at startup' and then click on Confirm and Save. Now reset the computer and when all the software has loaded, go to *CD Net2*'s disc list and activate PocketFS.

When a network client loads *CDfiler*, s/he will be presented with the usual list of CDs plus the *PocketFS* icon. Clicking on the icon will display a window showing the directory contents of the attached Pocket Book.



Show me the way **to go home**

Geoff Preston looks at the possible educational benefits of a couple of programs which were not written with education in mind



SW System's *Tube* opens with this really impressive map which can be scrolled with the cursor keys

I've always had a fascination for computer programs that attempt to carry out tasks that would normally require subjective decisions to be made by humans. Finding your way around the London Underground is one case in point. Planning a route is not always a straightforward calculation.

Tube

Tube by SW Systems is a utility to help you around the London Underground. The program opens by showing the centre part of the Underground map. It is a very accurate drawing which can be moved around with the cursor keys. To calculate a route the user must enter two stations. The first three or four characters of the station are normally all that is needed, by which time the program will have found the required one.

After the second station has been entered, it calculates and then displays the route with the estimated journey time. The algorithm calculates the route with the least number of changes which, as any regular commuters will tell you, is not necessarily the best option. There are a couple of useful features such as entering and storing your home station and a list of sights in London with the name of the nearest station.

The software is supplied on either SSD or, for £5 less, a PC disc which will need to be copied into the Pocket Book via the A Link, in which case it will occupy 128K of memory. It will run quite happily on a 256 Pocket Book II or Psion Series 3a.

Autoroute Express

A similar program is *Autoroute Express* by Microsoft which will calculate a route between any two points in the UK, and even allows the user to specify places to go via, including how long they wish to stop there. *Autoroute* attempts to take into account factors such as traffic density at certain times of the day, and quickest – as opposed to shortest – routes and therefore make a reasonable estimation of the likely time the journey would take.



The detail is excellent, and there are several interesting features like naming the place or road at the cursor

The program and associated data is held on a 1Mb SSD which is almost completely full and requires at least a 512Kb Pocket Book II to run properly. It can, however, be used to a (very) limited extent on a completely empty 128Kb Pocket Book II provided you don't attempt to plan too long a journey. The Pocket Book II display is quite small but the program uses scaling and panning to very good effect so that you can view just the right amount of detail. *Autoroute* produces a map of the route as well as a table, and it's possible to show both on the screen side by side.

The data is taken from the Ordnance Survey digital map data and includes a surprisingly large amount of information – over 77,000 miles which includes motorways, A roads and even B roads.

Use in the classroom

Although not originally intended as education programs, there is certainly some scope to use *Autoroute* in the classroom. Understanding the importance of planning journeys and learning to read maps accurately are skills that the vast majority of people will need sooner or later. Children will need to learn these skills early, and anything that takes the drudgery out of the task is surely welcome.

In the Geography National Curriculum there are several areas of study, mainly in Key Stage 3, which could be delivered with the use of either program, although *Autoroute* would seem the best choice. One such topic is route planning. It is great fun to work out a route 'by hand' and then see what the computer can come up with and why. *Autoroute* can be used to help develop locational geography, in particular points of the compass and distance: what geographers like to call 'a sense of place'. Used in conjunction with a printed road maps, I envisage a great many different activities being set.

Tube seems less likely for classroom use although some interesting exercises could be set using one of the programs and a London Underground map.

Conclusion

I have seen other programs of this type usually running on a desktop computer but the portability of the Pocket Book makes these versions far more practical. AU

Product details

Product: Autoroute Express
Supplier: Psion plc
Address: Alexander House, 85 Frampton Street, London NW8 8NQ
Tel: 0171-258 7248
Price: £69.95 inc VAT

Product: Tube
Supplier: SW Systems
Address: 71 Holbein Fields, Orange Park, Swindon, Wiltshire SN5 6DP
Tel: (01793) 872146
Price: £34.95 inc VAT

Joanne Hinkley looks at some of the Pocket Book software on The Datafile's PDCD3

Pocket Book **software**



PDCD3 contains over 22Mbytes of Pocket Book software. Here are just a few of the highlights.

PeriodC2

This is a database of the periodic table of elements. Installation on a Pocket Book 2 is straightforward: the main application (*Periodic.opa*) is first placed in the APPS directory. Within APPS another directory is created called Periodic and within that is placed the datafile (*Periodic.dbf*), and the picture of the periodic table (*Periodic.pic*). In use, the arrow keys are used to move the cursor to choose an element from the table. When the required element is selected, press return to see the data about it. This may then be scrolled with the arrow keys.



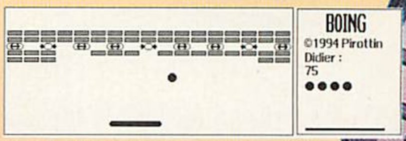
Ideal for science lessons – a complete database of the elements

GPlot, GPlotA and Graph2

Most Pocket Book software is for the newer PBII and Psion3a computers, but there are still some good programs around for the older PBI and S3. PBIs were not equipped with graph generating programs and so for many, these will be very welcome. All install in the usual way and offer a variety of facilities to generate graphs.

Boing

This takes me back to a program that was supplied with the original Sinclair Spectrum. It's a Shareware program based on *Breakout* and the idea is to guide the ball with the bat to knock all the bricks out of the wall. This one has some interesting additions including a brick which removes the side walls and another that reverses the control of the bat. Other interesting diversions include *Patience* and *Connect4*, both of which are well worth installing.



Just for fun, but what great fun it is

Tube20

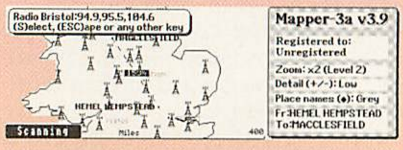
This program will attempt to calculate the best route between two stations on the London Underground. The author makes no claims that *Tube20* will provide the quickest or shortest route, although it will get you to your destination. It will, however, produce a route based on the least number of changes and results are usually quite good.

On the cover disc are two useful utilities from PDCD3 – a battery checker and a datafile sorter. AU

Product details

Product: PDCD3
Supplier: The Datafile
Address: 71 Anson Road, Locking, Weston-Super-Mare BS24 7DQ
Tel: (01934) 823005
Price: £25

The largest program **of all time?**



Several overlay files are available, including this one which gives the location of every BBC Radio transmitter

Well if it's not, it must come very close. Steve Litchfield's *Mapper3a* is described as a geographical information system. The 'backbone' of *Mapper3a* is a coastline map of the United Kingdom with which the user can zoom in and out to show various amounts of inland detail. The map is fairly accurate, but a compromise had to be made between detail displayed and memory used, not to mention re-draw time.

Only when the scale is up to about x8 does it become evident that the coastline is drawn with a series of rather long straight lines. Although not intended as a route-finder, it does contain many roads and railways and can carry out basic 'on-the-road' distance, route logging, moving map display and several other associated tasks.

Overlay files can be placed onto the map containing details about... whatever. Each overlay consists of an icon and a datafile containing information about locations together with sundry information about each record.

The number of overlays currently available is staggering, they include commercial radio stations, Happy Eater restaurants, airfields, theme parks, Forte Hotels, museums, castles, railway stations, the list goes on and on, but don't think about installing everything unless you have huge amounts of free memory in your Pocket Book plus a couple of very large SSDs.

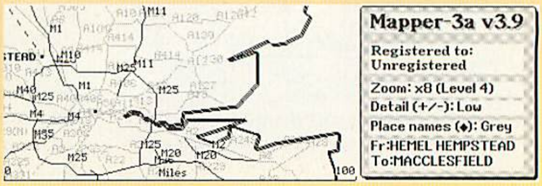
The thing that is so special about *Mapper3a* is that it has captured the imagination of scores of individuals who have created overlays and sent them in to Steve for inclusion with the program. Geography departments who have Pocket Books will find this program very useful indeed.

Mapper3a (V4.0) plus a small selection of overlays is on this month's cover disc.

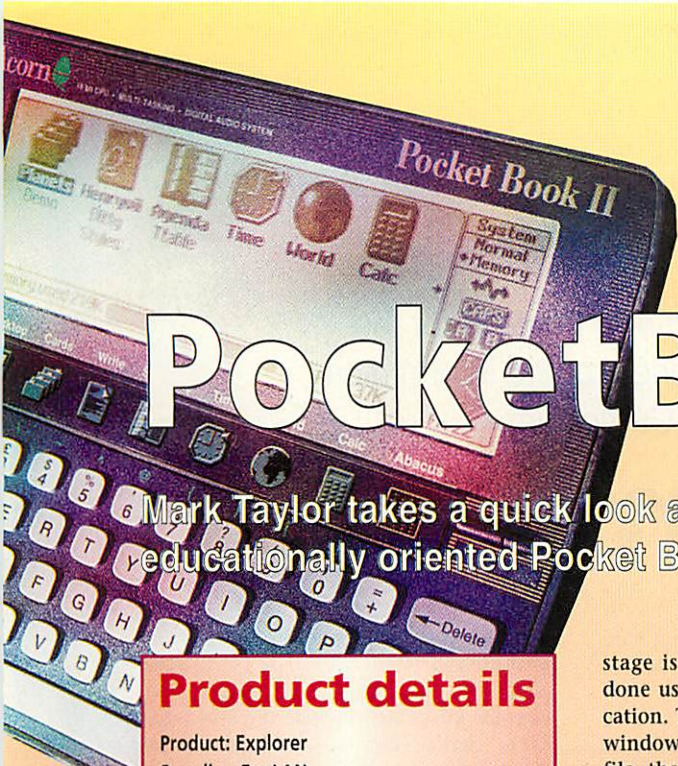
Geoff Preston AU

Product details

Product: Mapper 3a v3.9
Supplier: 3-Lib
Address: 22 Grays Crescent, Woodley, Berkshire RG5 3EN
Tel: (01734) 265081
Price: Shareware program costing £14 to register



All motorways and most A and B Roads are included



PocketBriefs

Mark Taylor takes a quick look at a couple of educationally oriented Pocket Book Programs

Product details

Product: Explorer
Supplier: ExpLAN
Address: St Catherine's House, 20 Plymouth Road, Tavistock, Devon PL19 8AY
Tel: (01822) 613868

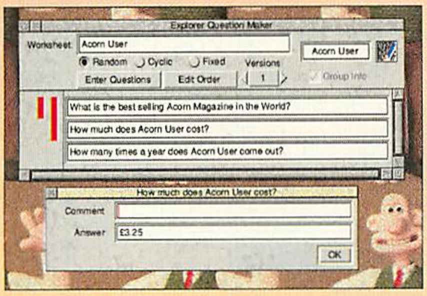
Pros: Simple to Use • Free Site Licence • Prevents soggy pieces of paper!

Cons: None

Explorer

Whenever I went on a school trip I was always given loads of worksheets to fill in during the day. This created all sorts of problems – managing to write legibly while on the move, keeping the papers together and, most of all, when it rained all your hard work got wet. Now there is an answer to all these and other problems with ExpLAN's *Explorer* – an electronic worksheet that runs on either the Pocket Book I or II.

Explorer consists of two parts: the question maker (which runs in the Risc OS desktop), and the Pocket Book front-end. An A-Link is required in order to use the program because the Pocket Book application is supplied on a floppy disc and needs downloading, as do the question files.



Explorer's Question Maker

Installation of *Explorer* is easy and involves modifying *PocketFS* and downloading the Pocket Book front-end. Both these tasks are carried out semi-automatically by a couple of utilities provided on the disc. The modification to *PocketFS* is to enable you to download questions and upload answers.

Once everything is in place the next stage is to create a question file. This is done using a simple-to-use RISC OS application. The application consists of a single window in which you enter the title of the file, the questions and the order in which they are to be asked. The program allows you to group questions together so that even if you have selected random order, it will keep the relevant questions together. The program is simple to use but does the job more than adequately.

Question files can also be created in Edit which, in some cases, would probably be more convenient. The created question file/files then need to be downloaded onto the Pocket Book using *PocketFS*.

Once you have downloaded your question file onto the Pocket Book you can load the Pocket Book front-end and begin answering the questions.

Upon loading a question file you are asked to enter your name and then you are taken to the first question. From here you can either answer the question, or move on leaving it unanswered. Once you have started answering a set of questions the program will not let you quit until all of them have been answered – I would have liked an option to enable you to override this. Once all the questions have been answered they can then be uploaded onto any Acorn machine, as a text file, for analysis.

Explorer has uses in almost every area of the curriculum and would be a good purchase for any school, especially those with class Pack(s) of Pocket Books. The program works on both models of the Pocket Book meaning schools don't have to have the latest machine to make use of it.

The Three Little Pigs

'I'll huff and I'll puff and I'll blow your house down...'

A classic line from a classic fairy tale which has now moved into the world of multimedia. *The Three Little Pigs* has been available on CD for quite some time and now, thanks to a new company called Pocket Media, is available for the Pocket Book II. It is supplied on a 1Mb SSD and is designed for pre-school children.

The program consists of two parts – the story and the games section. Selecting the story section allows you to either read or listen to the story depending upon

The Three Little Pigs



whether or not the sound option is on, while the games section allows you to play two simple games.

If you choose the story you are taken straight to the first page. The screen is divided into two parts – on the left-hand screen is the story and the pictures whilst on the right there are four icons enabling you to move about and exit from the story.

A lot of time must have gone into designing the pictures because despite the Pocket Book's small screen, the pictures are brilliant, clear and full of detail. Unfortunately, I can't say the same about the voice. Although perfectly clear, I feel it doesn't express much feeling. Having said all this, the story is entertaining, the graphics superb and if you turn the sound off an imaginative parent/teacher could make the voice up as they read through the story with a child.

The two games supplied consist of a version of Snap, which involves matching up a sentence with a picture, and a number recognition game which revolves around putting the correct number of candles on a cake. Both these games are simple but for pre-school children can help enforce the important issues of number and word recognition.

The Three Little Pigs is a landmark program for the Pocket Book, bringing multimedia to your palm. It is not without its faults – the sound isn't very good and I feel the text would have been better if it had been larger – but overall it is a good program. If you have a pre-school child this could be just the program to get them interested in computers. AU

Product details

Product: The Three Little Pigs
Supplier: Pocket Media
Address: PO Box 351, Bedford MK41 7ZZ
Tel: (01234) 349261
Cost : £39

Pros: Innovative • Entertaining • Excellent graphics

Cons: Poor sound • Text too small



Pocket measurement

The Pocket Book can now be used for the measurement component of the Information Technology National Curriculum

At the heart of *PocketLab* is the *Live Interface* designed by DCP Microdevelopments and is effectively a version of their successful *LogIT* interface. It is powered by either a mains adaptor or a battery, which maintains the portability aspect of the Pocket Book. Up to three sensors may be connected to the interface – the pre-release kit I had contained one light sensor and two temperature sensors, but several others are available including voltage and pH. The *Live Interface* is connected to the Pocket Book using one half of the Acorn 'A' Link.

The logging software is installed from the supplied SSD in the usual way and will run on a Pocket Book I or II. When run, a title screen is displayed and the user selects the logging activity from the menu. The software first calculates which sensor or sensors are connected and begins plotting a realtime line graph. The graph will have one line for each sensor, and each line is labelled with the appropriate sensor port number. The current readings are also shown on the right of the screen as a numerical value.

Although *PocketLab* is compatible with both versions of the Pocket Book, the display is very much Pocket Book I standard. However, the data can be saved in a variety of formats, including CSV, which could then be ported into a desktop computer. Once there, the values could be used in a dedicated graphing program or spreadsheet. The data can also be saved in 'native' spreadsheet format i.e., the spreadsheet application provided with the Pocket Book.

The format of the manual is a departure from Acorn's usual A5 booklet, being A4 and aimed squarely at teachers. Although only 40 pages, it contains all the information required to set up and monitor experiments, and even contains suggested teaching material.

The experiments outlined in the handbook are really aimed at KS 1-3, although teachers of both Information Technology and Science across all Key Stages will find *PocketLab* a worthwhile investment. For primary school teachers in particular, this is a simple, easy to use but extremely effective solution to data logging.

The full *PocketLab 1x1* kit costs £429+VAT and includes a 256K Pocket Book II, Live interface, 'A' Link, three sensors, logging software on SSD in a neat plastic case with a foam insert. The *PocketLab 5x5* contains five times the 1x1 version and costs £1999+VAT. For those who already have a Pocket Book, there are two upgrade kits which include the Live interface, three sensors and manual at £199+VAT or £949+VAT for a 5 pack.

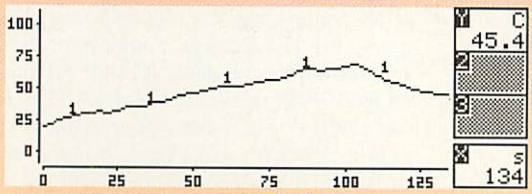
Geoff Preston AU

Product details

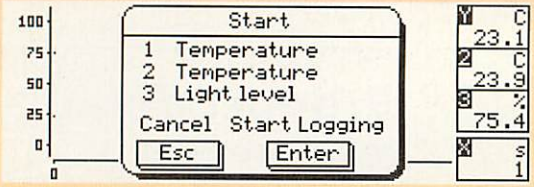
Product: PocketLab
Supplier: Xemplar
Address: The Quorum, Barnwell Road, Cambridge CB5 8RE
Tel: (01223) 724724

Pros: Easy to set up and use • Data compatible with several desktop applications

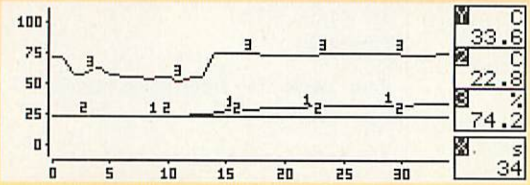
Cons: Pocket Book II users will be disappointed with the display



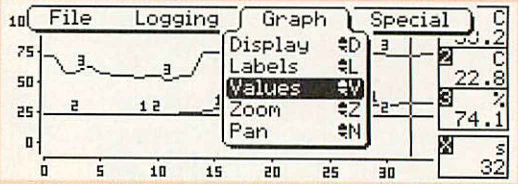
Hang a temperature sensor in a flask of water and bring to the boil – well, 74°



Logging begins by checking which sensors are connected

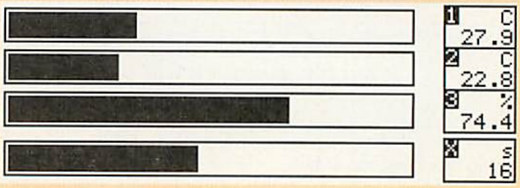


Up to 3 sensors may be connected

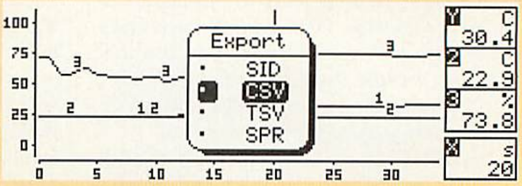


The 'Values' option draws a movable vertical line on the graph. The figures on the right show the levels at the line.....

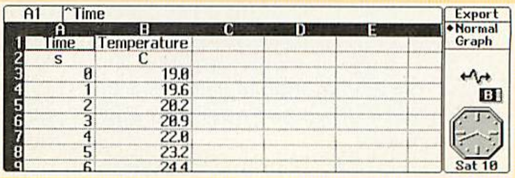
.... and the levels can then be displayed as a bar graph



Data can be output in several formats....



....including the Pocket Book's own spreadsheet



Free Ads

• For sale: Wolfenstein 3D, £20 ono. Burn Out, £17.50 ono. Saloon Cars Deluxe, £12.50 ono. Zool, £6, Lemmings, £5, Chuck rock, £5. A3010 Joystick interface, £12.50 ono. Simon the Sorceror (CD-ROM), £25, Acorn replay £7.50 ono. Artworks clip art 1, £12.50 ono, Acorn User cover CD-ROM, £4, Acorn Archimedes World cover CD-ROM, £2 or both cover CD-ROMS free with any purchase over £15. Pipedream 3, £25 ono. Startwrite, £25 ono. Tel: (0143871) 8507 anytime.

• Risc PC software, Eureka v3, £85. Touch Type £25, Pipedream 4, £15, 300 fonts £12, Maths Number £10, English £10. Tel: Reading (01734) 426843.

• A5000 4Mb RAM, 120Mb HD, Eizo 90305 Multiscan monitor, VIDC enhancer sound upgrade, Publisher, PC emulator v1.6, games, software. Excellent condition. £800 Tel: (01734) 419372.

• Wanted: Protext for Archimedes, also any Spanish tutorial software and Primary Education software for Electron. Ring: (01222) 566413.

• A3000, 2Mb, Acorn colour monitor, 100Mb HD, Learning Curve software and manuals. £350. Tel: (01865) 372888 (Oxon).

• A3010 used for maybe 100 hours, with all cables, manuals, loads of games plus Epson printer, 14in colour TV, £275 ono. Tel: Martin 0181-777 6228 (eves).

• Acorn A440, 4Mb RAM, Philips CM8833-T1, 40Mb HD, PaintJet colour printer, Impression, Equasor, Elite, Saloon Cars. Good condition + Acorn bundled software. £550 ono. Tel: 0181-291 1116 after 7pm.

• Games to swap: Cannon Fodder for Wolfenstein, Lemmings 2 for Speedball 2, E-Type for Zool, Chocks Comp for James Pond 2 Robocod. Tel: Philip (01886) 832417 after 7pm.

• A3000 2Mb Learning Curve, Colour monitor, original discs, manuals, plinth, 2 Quickshot joysticks, various games, over 100 Acorn magazines with discs, lots of PD discs. Original packing. £400. Tel: (01984) 641377.

• Archimedes 3000/310/410 miscellaneous used software and books for sale at sensible prices, incl. p&p to UK. Private owner needs the space. Phone (01707) 324804 (South Herts) for detailed list.

• Risc PC 600, 8Mb RAM, 1Mb VRAM, quad speed CD-ROM, PC card, Publisher and Artworks installed, all manuals available, £1350 ono. Tel: Chris on (01485) 520672 (nr. Kings Lynn).

• Laser printer Canon LBP4, paper feeder, LaserDirect card and software, £400. Tel: 0115-923 1134.

• Wanted: A4 portable for impoverished musicians. Must be in good order. Phone 0151-727 1454.

• A3000 with Acorn colour monitor (perfect), £150 for quick sale. Boxed and unopened EPS laser cartridge, £28. Tel: (01432) 274177 or email jdavis@globalnet.co.uk

• MIDI podules for A3000, £25 each. Pocket Book 2 with kit, £200. B&W vision digitiser HCCS, £30. My World materials. Excess school stock. Tel: (01227) 369362 (eves).

• Master128 Computer, 6502 Second Processor, Colour Monitor, 40Meg Hard Disc, Twin 5.25in D/S 40/80T Technomatic Disc Drive, Twin 3.5in D/S 80T Cumana Disc Drive, Citizen LSP-10 Printer, Marconi Trackerball, Pace Modem, Morley EPROM Programmer + Eraser, ROM Cartridges + ROM & Disc Software + Manuals. £200 the lot or will split. Ring John on 0113-282 5343 anytime.

• Wanted: Watford BW Digitiser (Old) and any working Teletext card for Archimedes A310. Reasonably high price accepted, or trade...Email: icecube@itai.treknet.is or tel: Iceland +354 467 1968.

• 2067, Pacman, Zool, Spell, Music Theory, Type Tutor, 1st Word+, Acorn DTP, each £5, Maths Sieve, Graph IT, Banner, Cross Stitch, EasiWord, Almanac, each £10. Tel: 0161-941 1683.

• For sale: BBC B Micro, master colour monitor works in wooden box, hence £20. Buyer collects. Tel: Matthew on 0181-523 8058.

• Risc PC 700, 9Mb RAM, 425Mb HD, CD-ROM, 15in monitor, all under warranty. Offers. Tel: 0131-447 8624.

• A5000, RISC OS 3.1, 4Mb RAM, 2 x 120Mb HD, AKF18 monitor, Panasonic KXP1180 dot matrix printer, all manuals, lots of software, excellent condition. £650. Tel: (01727) 869838. Email: amc4@doc.ic.ac.uk

• A5000, 2Mb RAM, 41Mb HD with Acorn AKF18 colour monitor, all manuals and plenty of software and games, everything boxed as new. £695. Call Paresh 0181-675 8648 (evenings).

• Seikosha SL-95 24 pin colour dot matrix printer includes ribbon and manuals, as new. £90. Tel: (01227) 764969.

• A5000, 4Mb RAM, 80Mb HD, RISC OS 3.1, Multisync monitor, 3.5 & 5.25 floppy drives, PC Emulator, loads of software, excellent condition, boxed and manuals. £575. Tel: (01892) 853515 (Kent).

• Wanted: 'A beginners guide to WIMP programming' or 'Basic WIMP programming on the Acorn' with disc. Tel: (01483) 768515 (Woking).

• Wanted: 1-2 or 1-4 RAM upgrade A3010. Very cheap please for disabled pensioner, cannot afford new. Has software that he can't use, computer main source of pleasure. Tel: (01204) 571836 (Bolton).

• A3000, ARM3, RISC OS 3.1, 2Mb RAM, 120Mb HD, colour monitor, Citizen 124D printer, loads of software, magazines, books etc. All for £400. Tel: (01922) 642050.

• Acorn A3000, 2Mb RAM, Video Enhancer allows high resolution graphics, 14in NEC Multiscan monitor, manuals, £350. Tel: 0181-967 3048 (Middx).

• For sale: BBC Micro, Master keyboard, no disc drive, not working, power turns on, buyer collects. Tel: Matthew on 0181-523 8058.

• A410/1, monitor, hard disc, RISC OS 3.0, joysticks, PD, software, £350. Also games: Speedball, Stunt Racer, Starfighter, Heimdall, Lotus II, Premier Manager and many more for sale. Tel: 0121-779 4964.

• A4 portable, 4Mb RAM, 120Mb HD, spare battery, tracker ball, shoulder bag, Atomwide Remote FS (parallel), £750. Tel: (01696) 622415.

• A420/1, 4meg RAM, 40Mb HD, Taxan 775 14in Multisync monitor. Panasonic KX-P 1124 printer. Learning Curve software. £500 ono. Tel: (01227) 232460 evenings.

• A420/1, 30MHz ARM3, 4Mb RAM, 105Mb HD, OS 3.1, SCSI I/F, Techno-I video digitiser, ColourCard, Eizo 9060S monitor, Epson FX80 printer, software, manuals. £500 ono. Tel: 0161-483 7843 (eves).

• A3000, 2Mb RAM, RO 3.1 30Mb HD, CUB 3000 monitor, joystick interface stand, 1st Word plus Amstrad printer. £220 ono. Tel: (01702) 714298 evenings.

• A4000, 4Mb RAM, 80Mb HD, AKF40 monitor, Impression Junior, Schema, Desktop OB, Spex, EasiWriter. Games unclude Birds of War, Cannon Fodder, Elite, Lotus II, Lemmings + lots of clipart, + sound sampler. £700 ono. Tel: (01392) 466430.

• A3000, RISC OS 3.1, 2Mb, 210Mb HD, colour monitor and printer. Games, word processor, spreadsheet, other software. Power pads. £600 ono. tel: 0181-857 9716 after 5pm.

• A5000 4Mb, 40HDD, Learning Curve complete, original packing & documentation plus Canon BJ10e 360dpi BubbleJet printer, £600 ono. Tel: 0161-973 6520.

• A3000 computer parts. 4Mb RAM, £85, RISC OS 3, £25, manuals, £65. 30Mb HD, £30, Serial Port, £10. Philips colour monitor, £120, also other parts. Tel: (01908) 616935 (evenings & weekends). Whole lot, £350.

• Wanted: Master Turbo with Interword and manual/guide. Must be working order and not ex-school/instructional example. Tel: Kent 0181-777 8939 anytime.

• A3000, RISC OS 2 2Mb, Acorn monitor, original software, manuals, games, £250. Rhapsody II, £20. Flashback, Mig 29, Cannon Fodder, Populous, Black Angel, £10 each. Tel: Windermere (015394) 45838.

• A4000 2meg, 80Mb HDD, CGA monitor. Software worth £700 including Impression 2.19, 1st Word+ 2, PCEm 1.8, Genesis, Pipedream 3, Lincadrisc. Excellent condition. £595. Tel: (01752) 560122.

• Cumana 300ia CD-ROM drive for the Risc PC, £70. Computer Concepts Turbo Driver v3, £20. Tel: Leicester (0116) 2663721.

• A3000, 2Mb RAM, colour monitor, 40 discs of WP, educational and games software. Original boxes and manuals. £150. Tel: (01491) 874371 (Goring, Oxon).

• Exchange communications receiver YAESU FRG7700 sideband AM-FM upto 30MHz for your Acorn A3010 2Mb RAM. Tel: (01745) 854121 anytime.

• A420/1 4Mb RAM, 20Mb HD, IDE Interface, ARM 3, OS 3, 5.25in extra disc drive, monitor, manuals and software. £250. Tel: (01922) 409454.

• Acorn A4000,4Mb RAM, 80Mb HD, AKF 50 Hi-res monitor. Advance database, spreadsheet and WP software. Good condition. £595 ono. Tel: 0191-281 7874 (Newcastle).

• Risc PC 600, 12Mb + 1Mb VRAM, 4x CD-ROM, 486 PC card, Mozart sound card, twin Pro Pads. Software includes Studio 24 Pro, Pipedream 4, Starfighter 3000, Sim City 2000, Cobolt Seed. A1 condition. £1600. Tel: (01228) 511668.

• For sale: A5000, lots of software, light home use only. £650 ono. Tel: (01525) 220058.

• Wanted by school with no funds! School needs Logotron Logo and Pendown chips for BBC Masters. Call (01844) 274078 (teachers phone/ansaphone) for further details.

• Wanted for A3000 with RISC OS 2, user guide and three supplied discs, also information for upgrading to RISC OS 3. Tel: (01705) 832873.

• A5000 2Mb RAM, 40Mb HD, AKF18 monitor, Citizen Swift 24e printer. Loads of software and games with manuals. £595 ono. Tel: (01225) 705479.

• Acorn A5000, 4Mb RAM, 170Mb HD, AKF50 monitor, software. Little used. Bargain £700 ono. Absolutely mint. Tel: (01582) 867263.

• FOR SALE: 420Mb IDE Hard disc for Risc PC, 6 month old £70, 6 Speed ATAPI internal CD-ROM Drive £100, Pro-Artisan 24 £75, C/C++ £150. Call Paul 0171-202 3309.

• DX4 100 PC card, £200. Revelation Image Pro £20. Flashback, £10 Tel: (01247) 888698.

• A3000, 2Mb RAM, Risc OS 3.11, 139Mb SCSI HD, OAK 16 bit SCSI card, serial chips, Monitor stand, + discs, VGC, £325. Tel: (01734) 875123 ext 7674 (Reading), during working day, ask for Ian Kelly.

• FOR SALE: Acorn C/C++ Mint condition £170. Pro-Artisan 2 CD £50 Acorn 16bit Sound Upgrade for Risc PC £40. Call Paul on 0171-202 3309 or email paul_jagger@uk.ibm.com

• Wanted: Omar Sharif's Bridge. Tel: (01223) 572561.

• Aleph 1 PC card for Archimedes A5000. 486/25MHz with 4Mb RAM. As new, with original packaging and software. £200 ono. Tel: Basingstoke (01256) 704868 after 6pm.

• Acorn Risc PC 600, AKF monitor, 16Mb memory, 2Mb VRAM, 420HD 2 slice, SCSI 2 I/F CD-ROM, Artworks, Publisher Plus, Photodesk, ProArtisan 24, ImageFS, £1300. Tel: (01900) 814602.

• A420/1, PC Emulator, MS-DOS, 4Meg RAM, 116Meg HD, RISC OS 3, 3.5in and 5.25in drives, scanner, 1st Word+, DTP, Arc DFS, Pipedream, many games, £850. Tel: (01256) 762972.

• Software for Archimedes, Risc, Acorn. Selection of educational, games, application and upgrade kits, also mouse. Please phone (01342) 826364.

• Archimedes A5000, 2Mb HD, AKF18 monitor, Learning Curve plus extra games and applications, £600 ono. Tel: 0181-346 6881.

• A4000, 2Mb, 80Mb HD. Colour monitor, Home Office pack. Excellent condition (hardly used). £550. Tel: (01242) 583909 (Glos).

• Free to a deserving cause: 135 issues of Acorn User, (near unbroken run, Nov 83 - Dec 95), and 61 issues of The Micro User (Dec 83 - Oct 89). Recipient to collect (from near Chelmsford, Essex) or pay carriage. Contact Derrick after 7pm on (01245) 225671.

• 50 games for sale or swap. Includes: Star Fighter, Sim City, Stunt Racer, Alone in the Dark, Wolfenstein, Cannon Fodder. £5 - £15. Tel: (01285) 713148.

• Wanted: Desperately in need of A310 or A400. Will pay carriage. Contact James on (01274) 877299.

• Games: James Pond, Quest for Gold, Twinworld, HeroQuest, Enter the Realm, E-Type. £5 each or all for £20. Will post. Phone 0181-540 4933.

• Risc PC 16Mb, 2Mb VRAM, (no monitor), 210HD, Internal CD-ROM, Canon LBP-4 Laser Direct printer, Scanlight 256, Eureka v3, Impressipj Publisher v4.08, ArtWorks on CD v1.56, ClipArt discs, Prophet v2.13 and other bits & pieces. Worth £3500. Any offers welcome. Buyer collects. Tel: 0116- 266 3721.

• A4000, 1 year old, HD, FD, RISC OS 3, Learning Curve package, James Pond, Manchester United, Pendown, Pipemania, Tettra 2, Dart Plus, My World, Tiler, Sprite file, Pacmania, lots more. £750 ono. Tel: (01582) 504637.

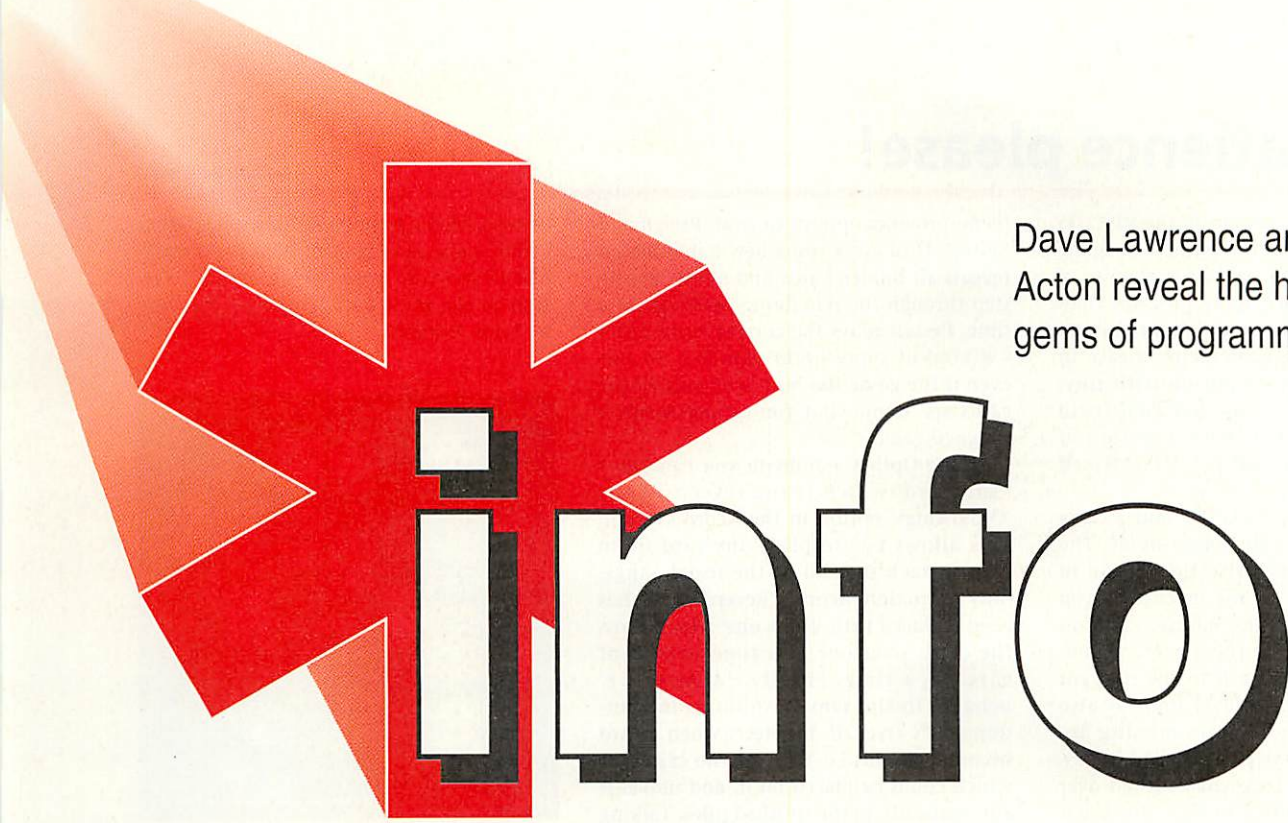
• A3010, 2Mb, Learning Curve, complete with discs, manuals, games, no screen, Acorn Advance also some Acorn User mags. £220. Tel: Heacham (01485) 570919.

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Dave Lawrence and Dave Acton reveal the hidden gems of programming



Type Righter

Author: Matthew Bloch

The modem-heads among you will appreciate this cunning utility from Matthew Bloch (the author of *DrawTint* and *Swarm*). It's a filetype guesser, but rather than sit obstinately on the icon-bar, it automatically monitors the contents of a given directory – normally your default download directory. Any files which appear here are dutifully examined by *AutoType* and if it can work out what sort of file it is, it will give it the appropriate RISC OS file stamp. If you are using Termite or any other comms program which guesses at the filetype, it will override it.

If this isn't clever enough for you, it can also be triggered manually for any file by the cunning use of the normal Filer menu – having selected the file with Menu, follow the 'File' sub-menu and then the 'Set type' sub-menu. Here, do not enter a file type but simply click on the existing file type with Select and *hold the button down* until you hear a beep. This will stoke up the autotype prog and attempt to guess the file type.

To use the automatic checking you will probably need to edit the first line of the !Run file to point to wherever your downloads folder is. You will probably also find it useful to automatically load *AutoType* somewhere in your boot sequence.

Matthew would like to point out that this is a development from another program of his called *TinyType* which did the same task, but ran as a wimptask. Since *TinyType*, *AutoType* was developed which included all the obvious file types you're likely to download. In addition, Mike Williams has added a few more (shown with * in the above list)

How it works...

The program is written in two parts: a module and a BASIC program. The module does the job of watching the downloads folder for new arrivals; any files which are closed inside the downloads folder are noted. The first 1536 bytes are taken off and passed to the BASIC program which looks at the contents and, based on astute guesswork, filetypes the file appropriately. The source to the module is included so you can see what it does, and it's a simple job to add more filetypes to *TypeProg*, including a suitable identification case to the list already present.

Beware – the program works in strange ways. Remember that it will try to set the type of *any* file closed in the downloads folder. Closing any file will cause *TypeProg* to be run, but it shouldn't set the file's type unless it is Data or untyped. Because it uses Filer_Run, you may get a surprise if you trigger *TypeProg* from outside the desktop. Currently, it queues up to 26 files, so don't be surprised if your hard drive goes haywire after you've done a lot of work outside the desktop. Also, the use of Filer_Run means that if you are holding down shift when it is run, the program will be listed. If this happens and your program isn't typed properly, just type *RunTypeProg and it will work properly, clearing any queue of files.

Any files in the queue which are deleted (*Newsbase* does this) are cleared without being touched. *TypeProg* does its best not to generate any errors.

Archives
Spark
ArcFS
PKZip
LHA

Bitmap
JPEG
GIF (87/89)
TIFF
Windows BMP
* ColoRIX
* PBM+
* Unix RLE
Clear

Vector drawing
Draw
Artworks

Music
MIDI
Digital Symphony
Desktop Tracker
STModule
* STracker

Sound
WAV
Audioworks
DataVox

Film
MPEG
Replay
AVI
* FLI/FLC

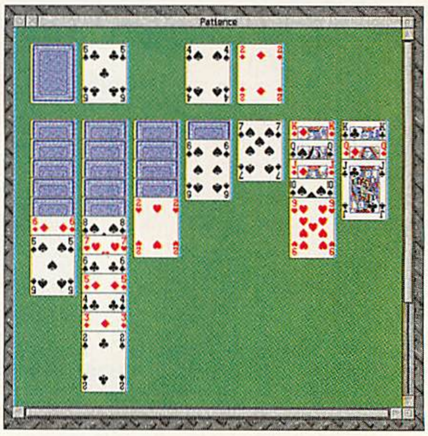
Next Patience please!

Author: Paul Irwin

For the likes of us, comparing the RISC OS desktop and Windoze is a bit of a foregone conclusion. However, certain elements of Windross are, in fact, more pleasant than we're used to up in our velvet-lined ivory tower, the patience game being a case in point. We have had to put up with tiny, boring cards for too long, but Paul Irwin has come to the rescue with a version of patience worthy of all our RISC-based MIPS!

Patience requires a Risc PC and a large (800 x 600 or bigger) 16 colour mode. The game plays very much like the version of Patience bundled with the machine – you can drag cards with the mouse, click on unturned cards to turn them over, or double-click a card to force it to the relevant finished pile. A single level undo is also provided. The only features missing are proper animation, selectable card backs, showing all three cards when turned over and the various scoring options. The main menu provides options to Deal, Resign and Restart. Deal gives you a new hand; Resign reveals all hidden cards and allows you to step through the remaining cards one at a time; Restart plays the current hand again – a kind of super undo. You can do this even if the game has been won and all the cards are 'home', but you cannot restart a resigned game.

In the Option sub-menu you can select 'Any Card' which is the reverse of the 'Only Kings' option in the Acorn version. This allows you to place any card in an empty stack instead of the usual Kings-only restriction. Acorn's 'Reverse cards' has been replaced with 'Draw one' which turns the cards over one at a time instead of three at a time. Finally, 'Auto move' behaves in the same fashion as in Windows NT's *FreeCell*. It detects when a card becomes surplus i.e. there are no cards left which could be placed on it, and moves it automatically to the finished piles. Talking of *FreeCell*, we have Paul's implementation of this game next month. What we'd really like to see now would be an updated version of the most excellent *Super Patience* by Jason Horsnell.



A change of scene

Author: Nicholas Marriott

*Info regular Nicholas Marriott has sent us a little ditty to liven up your backdrop. *Bdrops* is a simple program that waits for the number of seconds specified in the system variable Bdrops$Time and then changes the backdrop. Nicholas has provided a sample set of very simple backdrops to show the principle.

These have been registered into the resource filing system, so no disc accesses are required while the program is running. If you wish, you can change the BDrops$Path variable to point to a directory on your hard disc containing the backdrops you wish to use. They should be named from 00-nn and you should set Bdrops$Totals to the number of the last file. The RMLoad command in the run file should also be removed.

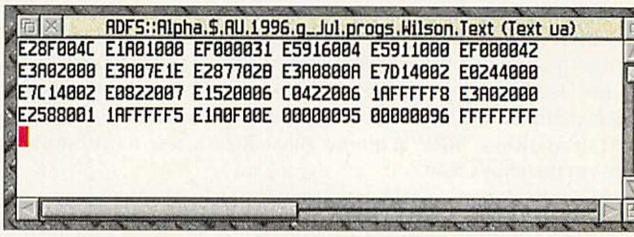
If you wish to store your backdrops in ResourceFS, you should use the modified version of 'Register' included in the application directory. The module must be called 'Backdrops' and the filename should be something meaningful like 'Textures'. Backdrops should be stored in Resources:$.Backdrops.*ModuleFilename*. Look at the file structure of the module supplied as an example.

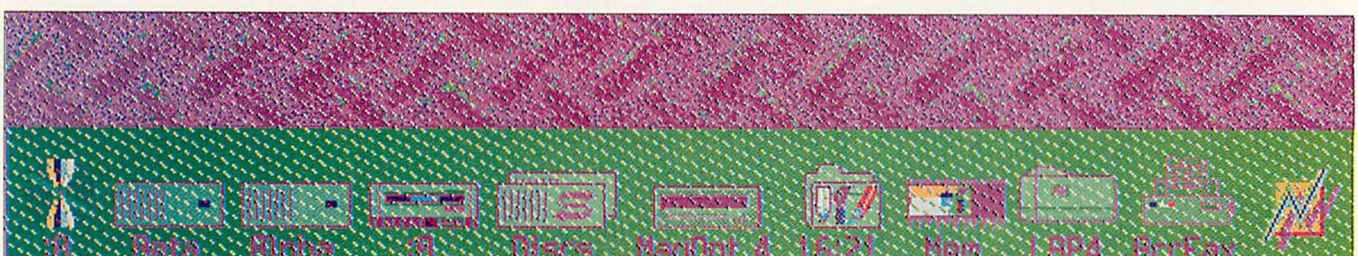
Sing the sig

Author: James Wilson

Well not quite actually. You see James Wilson actually sent us his e-mail signature as a submission – 24 32-bit hex numbers. These, we were assured, were not a virus but a real prog, so we knocked up a quick basic prog to re-create the original 'Absolute' file and ran it to reveal, well, whatever it is.

Since the rather untimely demise of the 1-line basic prog, we welcome any further contributions to the sub-256 byte ARM code 'thing'. Many original BBC utilities had to fit into one page of memory, so the 256 byte limit seems somewhat appropriate.





Tree of a kind

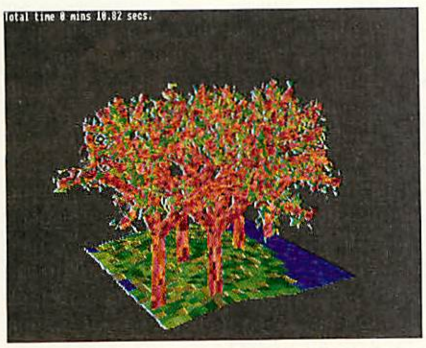
Author: Stuart Whitehouse

Well, in fact whatever kind of tree you fancy. Stuart Whitehouse has updated Tim Jones's tree plotter (AU January 1994) by rewriting the most important bits of the original Basic in ARM code. As a result, *!Trees* runs some 40 times as fast as its predecessor and also boasts new features including a bumpy terrain and the ability to plot several trees at once.

'When run the program just installs itself



on the icon bar. Click on its icon to open the options window. The top left part is for memory and the top right will list any



problems that will prevent the current settings being used. The bottom half of the window contains the actual settings which are split into four groups – click on the radio icons to change the group being displayed.

'When a tree is drawn it will initially appear covering the whole screen. Once you press Space the desktop reappears, with the tree inside a window – this can now be saved as a sprite.

'The interactive help gives some advice about the settings, and the main ones are described here. A tree is calculated by starting with the trunk which then splits into several smaller branches, each of which splits into several smaller branches, and so on. Leaves are added to the smallest branches and a grassy floor is drawn around the base of the tree.'

Branches split into determines how many new branches are created when a larger branch splits up – it will normally be two or three (three is best). As this applies at every stage of the tree, the cumulative effect of changing this can be very great.

Number of branch splittings determines how many layers of branches are added before the program stops. If this is one the tree will just be a trunk with a group of branches coming from it. Again, increasing this greatly increases the complexity of the tree.

Resolution reduction reduces the 'branch sides' and 'branch sections' for each layer of branches. For a large tree the outer branches are much smaller than the trunk so don't need to be made up of as many segments. Since most of the segments in a diagram are in the branches and most of the branches of a tree are in the outer layer, using this system can reduce the number of segments used in a tree without making it look noticeably different.

It is worth using at least one here. If sides and sections start very large then two might be worthwhile. The program range checks sides and sections and will prevent them going too low. Note – this does not change the overall size or position of the branches, just how many pieces they are chopped up into for plotting.

Leaf generations determines how many of the generations of branches have leaves on. Two is generally best; if one (outermost branches only) then the foliage may look rather sparse, and with three or more it can be hard to see any branches at all. The branches with leaves are always the outermost generations.

Tree shape changes the orientation of the branches of the tree – the numbers have no particular meaning. Unless you change this or one of the other settings, clicking again on the Draw button will produce exactly the same tree(s). With multiple trees, the positions of the trees on the terrain are random – each time the picture is drawn the trees will be in different places.

Leaf size and **Number leaves** control the leaves that appear on each appropriate branch. If you increase one it is best to decrease the other to keep the overall amount of foliage about constant.

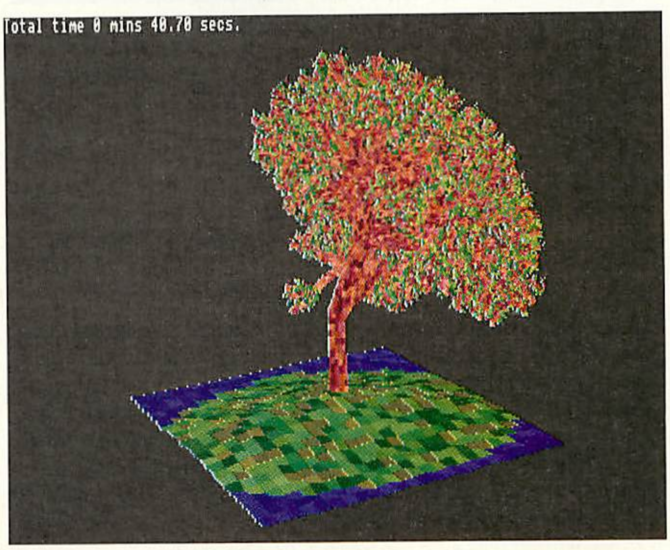
Tree separation controls the minimum spreading of the trees and of the control points in the terrain. The units are arbitrary, but the system works in terrain blocks (independent of the size these are on screen). Therefore, increasing the grass segment size will also make the trees further apart on the screen. If the program creates an error 'Failed to find suitable positions for tree-trunks and/or terrain.' then this setting was too high.

'If the tree you have selected needs more memory than is available, a warning will appear in the box at the top right of the options window. The settings should be changed until this goes away. If you are short of memory, reduce the settings Branch sections and sides and/or increase Resolution Reduction – this will decrease the memory needed for each branch. The memory used on leaves and the grass is normally fairly insignificant.

'The amount of memory allocated to Trees can be increased or decreased by dragging its bar in the Task manager's memory display. To simply grab all the spare memory in the machine, click on the Claim button in the options window. Trees will probably need at least 1Mb to do anything worthwhile.

'If you want to know how the program works, I suggest you look back at the original Basic version (on AU January 94 disc), which is much clearer. The parts that have been converted to machine code are those dealing with individual rectangles, and the parts that calculate the general structure of the tree are relatively unchanged. AU described the Basic version as being mathematically sound. This is no longer true. Much of the armcode is approximate and, for example, the plotter is (I think) incorrect – I certainly wouldn't describe it as sound. However, the result still looks about the same.'

A selection of example trees and general shrubbery is included on the disc – simply drag onto the main window and click Draw. You can, of course, save the current settings as a data file from a menu over the tree display window.



Postcards from the edge...

Author: Mr R Geleit



... or maybe the middle or the back or the top – we can't really tell. Apparently Mr R Geleit's program *4CUBES* draws hypercubes and lets you fly around them in four dimensional space. All I can say is that last time *I* was in fourspace I'm sure it was much more colourful and I'm sure there were wibbly-wobbly pink rabbits playing Twister. Use the mouse to move the hypercube and Menu and Adjust to move forwards and backwards. If you want to be really immersed in the full 4D environment, you can even change N% to produce more hypercubes. Mr Geleit says: 'The pitch/roll analogy and display method may prove useful to someone.' Well, if they do please let us know!

A great divide

Author: Les Thurlby

The dividing in this case is done by none other than Les Thurlby, he who brought us a demonstration of 'Russian' multiplication not so long ago.

Apparently, Les was prompted to write his first program after an outline of the method was published in another respected publication. A further article has led to his latest offering – *EasyDiv* – a Basic example of a method of division which only requires the ability to multiply by 2, add and subtract.

The method goes as follows:

1. Multiply the divisor by two, enough times to reach or not quite reach the value of the dividend.
2. Attempt to subtract each of the values obtained in step one from the dividend. Note which can be subtracted to yield a positive result and keep a running total of their ratios to the divisor.
3. The sum of the ratios in step two is the quotient. The remainder is whatever is left over at the end of the subtractions in step two.

Running *Easydiv* illustrates the process much better than can be described on paper. Of course, because the algorithm relies only on multiplying by two, addition and subtraction, it is potentially very quick if implemented in ARM code. We knocked up *EasyDivARM* to show how easily it can be done. The ARM version is essentially the same as the Basic original. It only works for positive integers – if you need it to cope with negative divisors or dividends, simply convert both to positive numbers at the start. If the top bit of (dividend EOR divisor) is set then you will need to make the result negative.

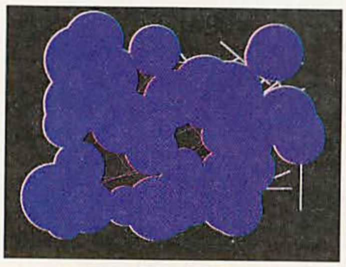
As a test, each value from 1 to 1000 is divided in turn by each value from 1 to 1000. The million divisions take just one and a half seconds on a RiscPC 600, so full marks to Mr Thurlby and the originator of the method for a splendidly speedy little algorithm.

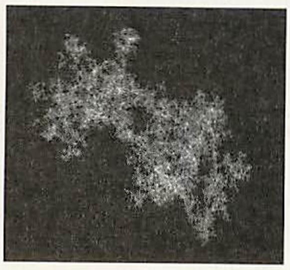
Three of a kind (not)

Author: Jan Vibe

These are three remarkably diverse examples of the output of arch Basicist Jan Vibe.

1L_Stereo2 is, as you might gather from the title, a one-line stereo picture generator. Just enter your text and the little program writes it large and then transforms it into a random dot stereogram.





Border is probably very cunning indeed and might prove very useful for someone who is desperate to draw white borders around random arrangements of blue shapes. The program illustrates a method of plotting a white border around a random arrangement of blue shapes. It does so recursively which makes it exceedingly clever in our book, and could probably even be altered to draw white borders around green shapes if required.

Fluff is another one-liner that plots the sort of thing that accumulates in the filter of your computer fan. (Go on, clean it out now while I've reminded you, and compare it to the version on screen.) Incidentally, the program has nothing at all to do with the popular disc jockey and all-round funster Alan Freeman who I believe goes under a similar nickname, although the patterns depicted may resemble some part of his brain.

*QUIT

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Compatibility table

Program	RISC OS 2	RISC OS 3.1	RISC OS 3.5+
Auto Type	No	Yes	Yes
4 Cubes	Yes	Yes	Yes
Patience	No	No	Yes
Bdrops	No	Yes	Yes
Trees	No	Yes	Yes
1L-Stereo2	Yes	Yes	Yes
Border	No	Yes	Yes
Fluff	Yes	Yes	Yes
EasyDiv	Yes	Yes	Yes
EasyDiv ARM	Yes	Yes	Yes
Signature	Yes	Yes	Yes

Mike Cook's hardware series

Three-legged heroes

Mike Cook designs an intelligent Transistor Tester

Of all the inventions of the twentieth century, surely the most significant one must be the transistor – although my wife holds out for the dishwasher. The transistor is the basis of all modern electronics today from radios to computers, in fact in my schooldays a 'transistor' meant a portable radio. Today, transistors are the three legged beasts that are the basic building block of all integrated circuits.

I remember saving up three weeks pocket money to buy one when I was 13 – it cost seven shillings and sixpence and was called an OC71. In those days they only came in one variety and pinout, nowadays they come in two types and a bewildering variety of shapes and pinouts. So much so, that the same transistor can be sold with many different pinouts.

Now anyone concerned at all with electronics will have acquired a junk box containing several different types of transistor and probably will not have access to all the data sheets. In fact, one popular way of purchasing transistors is to buy a bag of assorted unmarked ones. Now you can get transistor curve tracers – they are very expensive and look like a large oscilloscope. However, the snag is that in order to test a transistor you need to know its pinout, that is which pin is which. Therefore, I decided to see if I could design a transistor tester that would not only tell you if the transistor was working but also its type along with its pinout.

As you might have guessed, writing an article like this every month for the last 13 years means I end up with a lot of circuits hanging about. Not many of my projects are permanently used, their parts being recycled into new projects. Even fewer achieve the final accolade – 'box status' – so it is a measure of how pleased I was with the design that this project was instantly built into a box with its own interfacing circuit.

So let's see what we need to do to build an intelligent transistor tester. First off, remember that we think of electricity flowing from the positive terminal to the negative one, whereas it is actually a flow of electrons the other way round. Before the true nature of electricity was known scientists made a guess as to the flow direction, a 50/50 chance that they got wrong. So now we are lumbered with the twin concepts of conventional current or electron flow.

Transistors, nowadays, are mainly made using silicon. Initially, germanium was used but this is seldom found now. By adding certain impurities in minute amounts you can create N type or P type silicon, the difference being how the electricity moves through it. If you connect a voltage up to a piece of silicon you will get electricity flowing through it. With N type silicon, electricity conducts by electrons, negative particles, travelling from the negative to the positive terminals, whereas in P type silicon positive particles carry the current going from the positive to the negative terminals.

Now, these positive particles are called holes and don't really exist. Yes read that again, it's right. A hole is the absence of an electron, a vacancy where it can sit. Any electron filling the vacancy will leave a hole behind it that can be filled by a different electron. So while the electrons shuffle towards the negative terminal the hole makes its way to the positive one. It's much easier to think of the hole as a particle in its own right, a bit like considering a bubble rising to the surface rather than all the surrounding liquid slipping down a bit.

Having got that concept I can describe a transistor and how it works. Simply take these two types of silicon and make a sandwich as shown

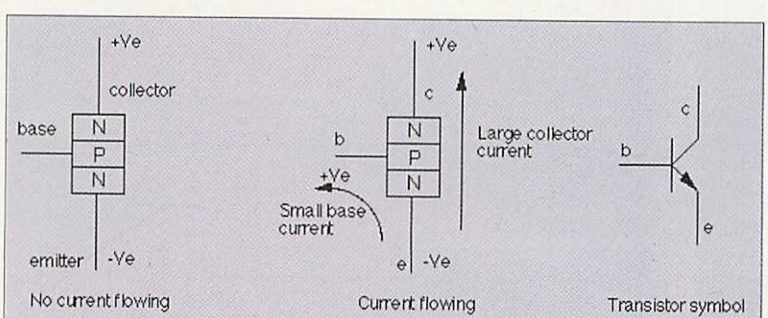


Figure I: A basic transistor

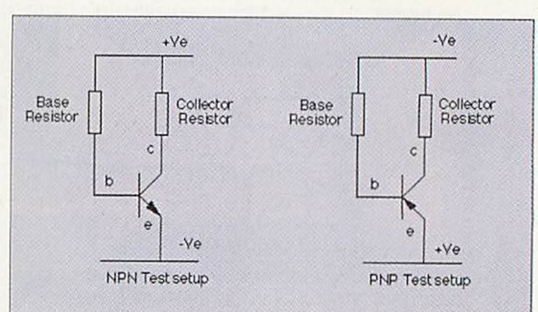


Figure II: Transistor test set up

in Figure I. Looking at this it come as no surprise to learn that we call this an NPN-type transistor. It is possible to make transistors out of the other type of sandwich, the PNP, as we will see later. In this figure I have shown an applied voltage across the sandwich, and no current can flow because the electrons can't get over the P layer in the middle – it is all to do with electric fields stopping them moving through the P type region.

If we take a wire connected to the P type middle region or base of the transistor and apply a voltage to it you will cause a current to flow from the emitter to the base. All the free electrons in the bottom part of the sandwich see all the extra holes in the base and would like to combine with them. Like some other aspects of life, each hole manages to attract several, even hundreds of electrons to it.

One electron combines with the hole but all the others are running so fast that they end up with enough energy to burst through into the P layer, flow right across it and end up in the collector region. Therefore, a small current flowing in the base collector region will cause a large current to flow from emitter to the collector. You can see where the terms emitter and collector come from now can't you. So why is the middle one called the base? Well that's historic and comes from how this sandwich is actually made. They start with a base of P type material and deposit two spots of N type material either side of it. This type of topology is used because you can only connect conducting wires to the top or bottom of the silicon, not in the middle.

So in essence, a small current flowing causes a larger one to flow and the difference between these two currents is called the 'gain' of the transistor.

Looking at Figure I, you might think there isn't any difference between the collector and the emitter and, indeed, in terms of solid state physics there isn't. However, in order to maximise the gain of a transistor the collector is made larger than the emitter. Therefore, if you wired up a transistor with the emitter and collector reversed it would still work, but the gain would be reduced. That's something they don't tell you about in the theory book. In fact I was once asked that question in a job interview – I knew the answer and was offered the job!

Now, that gives us a clue as to how we can tell the emitter from the collector. If we wire it up one way round and measure the gain, then do the same with them swapped over, the configuration with the highest gain is the correct pinout. But that still leaves us with the problem of which one is the base. If you connect the base to positive and the emitter to negative then there will be current flowing, and if it is the other way round there won't be.

For a PNP transistor we have exactly the same procedure but with reversed polarities. Figure II shows the basic test setup we wish to achieve for each type of transistor. Note the different way the arrow points in the PNP symbol and the supplies are reversed polarity. What we need for an intelligent transistor tester is to be able to connect any of its pins to the positive or negative supplies through either the base resistor or collector resistor. As each combination is tried, the base and emitter currents are measured and the one that gives the sensible answer is the correct configuration for the device under test.

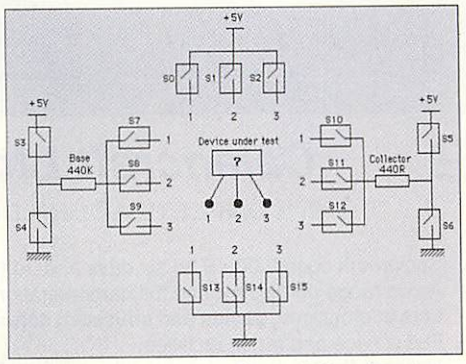


Figure III: Transistor tester switching arrangement

So we have two problems here. Firstly, we have to connect the transistor up in any configuration and then we have to measure currents. For the first part we need a different type of component from the normal digital fair – an analogue switch. This is a device that when turned on will allow current to flow in either direction, and when it is turned off there shouldn't be any current flowing at all. There isn't time to go into the workings of such a device but you can get four in a single IC quite cheaply. Our computer can control each switch to make sure we try all the combinations.

Measuring current is quite simple. All we have to do is pass the current through a resistor and measure the voltage across that resistor, using an A/D (analogue to digital converter). However, measuring across a resistor that could be any way round means using a differential input to the A/D. These are not very common but there is a mode on the I²C bus device that will do just that. Therefore, I decided to base the transistor tester around my I²C interface as described in the December 95 issue of *Acorn User*. You can use either the board I described then, along with some additional parts or build it all up together – I chose the latter.

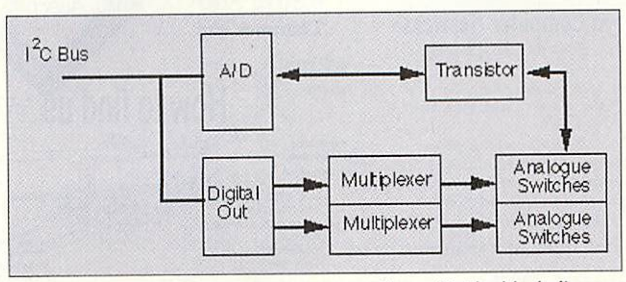


Figure IV: The block diagram of the transistor tester

However, before we begin we have to know how many analogue switches we need to use. Remember – we have to switch any transistor pin to positive, negative, collector resistor or base resistor, and then we have to connect the other end of the base and collector resistors to either positive or negative. The final configuration I came up with is shown in Figure III. You will see that a quick count reveals that you need 16 analogue switches to do all this. With a project as complex as this it is important to label the switches – at this stage it is irrelevant what the labels are but it will help up build up the final circuit.

Now my I²C interface board has only eight digital outputs so I was faced with a choice. I could add an extra digital output chip or I could do a little multiplexing. I decided on the latter because it is a little cheaper and it makes it more convenient to construct if you were going to use it on my pre-assembled I²C interface boards. Figure IV shows the block diagram of the transistor tester.

Next month we shall see how this all fits together when I will show you the circuit diagram of the tester and the desktop software needed to drive it. AU

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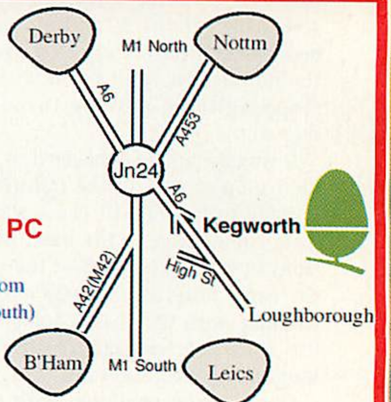
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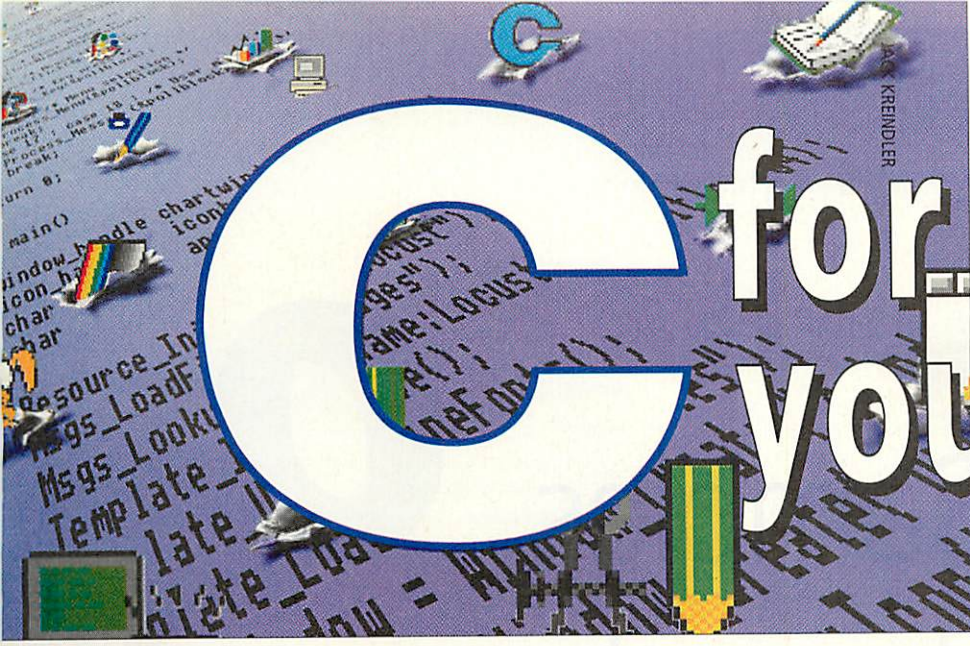
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C for yourself

Steve Mumford describes how to handle templates with the developing *Acorn User* WIMP library

Last month I introduced the basics of creating a WIMP library. To continue then, we'll look at the functions that allow template loading and window manipulation.

You may remember that the template-loading routine in the original *WimpC* example was somewhat ungainly; this time round, it's been replaced with several functions that provide a much more flexible interface. There are three stages to work through when extracting template data – you must first open the file, read the data for each window you wish to create, then close the file again once you've finished. Three functions are provided in *AULib* to cover these requirements, and these are **au_opentemplate**, **au_loadtemplate** and **au_closetemplate** respectively. A typical loading cycle, taken from the example on the cover disc, looks like this:

```
au_opentemplate("<WimpC$Dir>.Templates");
if(au_loadtemplate("MainWindow",
&win_array[0], 0) == 0) {
au_report_error(1 , "Template not found!",
1, appname);
QUIT_FLAG = 1;
}
au_closetemplate();
au_openwin_from_templatedata(&win_array[0]
, -1);
```

The **au_opentemplate** function takes the name of the template file to be accessed, and simply sets things up for the actual loading process – however, before this can be done you must prepare an area of memory in which to hold the information. In the original example, I took the easy way out by defining two large global data blocks at the beginning of the program; they were far bigger than they needed to be, and they had no inherent structure.

AULib defines a new structure type named **window_data** that holds the window's name, its all-important handle, and pointers to a buffer and some workspace that store the window's definition and data about its icons. Before templates can be loaded, you must declare an appropriate number of these structures – in our example I've created a global array of **window_data** structures at the start of the program.

Once you've defined a structure to hold the window information, you can load a template by instructing *AULib* to search through the file for a particular name. **au_loadtemplate** takes three parameters, the first being the name of the template to use within the file, followed by a pointer to the structure that's going to hold the data, with an integer as the third argument – normally zero, but it can be non-zero if used in wildcarded searches. The function returns an integer relating to the position of the next entry after the chosen template; if this is zero, it means the template couldn't be found. This should be trapped and the program halted if this could cause a crash, hence the check made in the example shown above.

If there are several windows in the file whose names begin with *Main*, for example, it's possible to load them all one after the other by calling **au_template** with *Main** as the search string. As mentioned above, **au_loadtemplate** returns an integer that indicates where the next match is and, using this value in the next call, informs the function as to where it should start subsequent searches from.

There's a slight catch; because the wildcarded name is replaced in memory with the full window identifier when a match is found, the datablock that holds the shortened name must be large enough to accommodate the full string – in the example above this is not necessarily the case because we're creating a temporary character array on the fly. In order to avoid crashes, this declaration should be made by hand to ensure that the array will be large enough:

```
char name[12] = "Main*";
int call = 0;
int index = 0;
do {
call = au_loadtemplate(name,
&win_array[index++], call);
strcpy(name, "Main*");
} while (call != 0);
```

The fragment shown above will cycle through all templates beginning with *Main* and load them into *win_array* – note that because *name* will be filled with the actual name of a successful match, it must be re-initialised with the wildcarded string in order to continue the hunt successfully.

Once you've loaded all the templates that you need, a simple call to **au_closetemplate** will tidy up afterwards, and the windows can then be displayed on screen by calling **au_openwin_from_templatedata** with a pointer to the **window_data** structure and an integer denoting its position on the window stack – normally -1 to display it over the top of everything else.

Next month, I'll get round to discussing menu creation, and add a little more functionality to the library – bye for now. AU



Rambles through Acorn Wood

Mike Cook provides answers and solutions to your problems

Some months seem to fly by and it is difficult to know what you have done with it. Others, like last month, have so much going on that it is difficult to know how you fitted it all in.

I was looking through a cover disc from a Macintosh magazine and came across the custom icon section. Under the Mac's operating system, each document or folder can have its own individual icon which is 32 x 32 pixels, and there are a lot of very good PD icons available. In particular, I wanted to use one for something I was working on, so I thought it might be a good idea to write an application that steals icons from the Mac – and the results should be on this month's cover disc. It's an application that extracts 18 icons – that's the 8-bit colour icon – and uses the single bit icons to create a mask. All you need to do is drag the resource fork of the Macintosh file onto the icon bar.

I was using an early version of Computer Concepts' MacFS and experienced a little trouble. Mac Icons tend to be distributed in three different ways – ResEdit file, on an empty folder and on a short text file – and MacFS could only cope with the first type of file. On the empty folder the icon file was there but trying to do anything with it resulted with a 'File not found' error message. With the text files, MacFS recognises it as text and throws away all the other information – thanks 'intelligent' software. A quick call to Computer Concepts revealed there is a later version than we had here at the office, but an update has failed to materialise yet – I'll keep you posted.

I wouldn't mind extending this application to handle ppats. These are the tiling patterns used to paint the background on Macs, but unfortunately I haven't got the specification of these patterns. I'll keep on looking.

I was looking at my Web page containing the Body Build index, and it was taking a long time to load because of the large number of links to the FTP site on it. In fact, it appeared to be crashing my new version of Netscape, so I decided to rationalise it. Now there is a full index with a description of the articles and links to a separate download link pages for each year.

I have also changed the background, as the old one (a repeating circuit board) made actually reading the text difficult. So I now have some emboss effects of a soldering iron and an arm with a spanner end that used to adorn the articles in the early '90s.

Finally, I scanned in some artwork that used to accompany each article. With one of them I have used a transparent colour even though my Acorn Web browser can't cope with it – maybe there is a better version now. See it on http://physics.mmu.ac.uk/Physics/Acorn/ (note the capital letters do matter). Incidentally, the machine running the Web server has been changed. We used to use an old 486 sitting in the corner of our advanced modelling laboratory but, unfortunately, it became a bit unreliable, suffering frequent crashes. Finally, even resets failed to initialise one of the interface cards so we have put all of the site onto a Sun. This is a lot faster and you will notice the difference, especially if you are on a direct connection to the Net. My apologies to all those who had trouble accessing the machine during the change over period.

On the work front, I have been on a committee devising a new degree, 'Environmental Modelling' – by modelling we mean mathematical modelling, not clay or folded paper. This aims to teach students how to model the effects of pollution, disasters and our natural environment. We hope it will appeal to maths students who want to do something practical with there skills. For more information look at http://math.mmu.ac.uk/em/.

Onto the problems. Mr Paul Pibworth wrote saying:

Do you know what changes have been made to the operation of the *FX calls and the ADVAL command concerned with the serial port. I did ask at last year's Acorn User show but nobody seemed to know. I have been using a program to transfer files at my school between the Model B and the Archimedes, and this worked without any problem. However, since changing over to RISC OS 3.5 on the Risc PC this frequently hangs up. Could you please explain to me what has changed in the new operating system. I am enclosing the programs I have written.

I don't usually delve into other people's code but this puzzled me because I didn't know of any changes to these calls. I dragged my old model B from the cellar and tried out Mr Pibworth's programs and they did work perfectly. Alright I'll be honest, they did hang up every now and then but this could always be traced to me typing something wrong at the Model B end of the link – usually a file name that didn't exist.

I thought there might have been some problem with the handshaking on his machine because it is not set in the original program. Also, some of the calls used are not recommended in the latest Programmers reference manual. Therefore, I did some modifications to include a bit of error detection and tidied up the calls, and you can find this on the cover disc. I took the opportunity to transfer all my old

ions & swers

Body Building programs to my Risc PC, and when I get round to it they will probably find their way onto the Net.

James Bradbury from Southampton is puzzled, he writes:

I have noticed something strange with my Risc PC 700 and the amount of VRAM it allocates in 32,000 colour screen modes. As I understand, the amount of VRAM you need for a specific screen mode is calculated as follows. First we need to know that 32,000 colours can be expressed as 15-bit colour because 2 to the power 15 is 32,768. Then we need to know how many pixels are on the screen which is simply the screen resolution in the X direction multiplied by the resolution in the Y direction. Then, simply multiply all these numbers together to get the number of bits we need, for example 800 x 600 x 15 = 7,200,000

To convert this into bytes we simply divide by 8 and to have the answer in K bytes divide this by 1024. When this is done we get 879Kb. So why does my Risc PC use 940 Kb which is enough VRAM for 16-bit colour or 65,536 colours? It's the same using all other resolutions using 32,000 colours! Is my machine showing 65,000 colours or has it just gone memory mad?

Well hands up all those who spotted the mistake in that line of reasoning – it was right at the beginning. The 32,000 colour mode is 15-bit colour, that is 5-bits each for the Red, Green and Blue guns on the monitor. However, the memory in the computer is arranged in a 32-bit bus which means the hardware can only access four bytes at a time. This is enough for two pixels – the extra bit in each pixel is not used. If you think about it, what could it be used for without disrupting the symmetry of the colour model?

So the computer wastes one bit per pixel. Now this would give 937.5Kb and you have seen that it actually takes 940Kb. This extra memory is wasted because the memory management unit that maps physical memory to addresses only handles memory in 4Kb blocks. Mind you, if you think this is bad, look at the millions of colours mode. This uses 24-bits per pixel – 8-bits each for the Red, Green and Blue. However, the computer grabs 32-bits per pixel, which means it wastes nearly half a Meg of memory in an 800 x 600 screen. Anyone want to write a filing system to recover it?

I got an e-mail concerning the Risc PC 600 Mk2, but unfortunately I lost the name of the sender:

I read somewhere that the Risc PC 600 Mk2 does not have a backplane. Is this true and, if so, do I need it for expansion and how much does it cost?

Well, I was not sure so I contacted my old friend Paul Beverley from Norwich Computer services. This is his reply:

He is correct. However, to confuse things, the very first Risc PC 600 Mk2's accidentally came out with a backplane in. We got one for a customer, but they were not supposed to have had one in. (I call them the 4Mb Risc PC 600 as a way of differentiating them – they don't have any VRAM in whereas the original Risc PC 600's were 5Mb or 9Mb.) We sell a two-slot backplane for £35 inclusive.

Now for some feedback from previous columns. David Pilling was wondering if my fax trouble was from his application ArcFax. I'm happy to report that it wasn't ArcFax but was from a Motorola application on my Mac. However, he confirms all is not 100 per cent in faxland even if your end is implemented correctly – a failure rate of about 4 per cent is to be expected.

Wilfred Kendall from the Department of Statistics at the University of Warwick, takes me to task about my comments on Reduce:

I don't want to start a language war here, but it is a little unfair of you to describe Reduce as a 'welterweight' symbolic mathematics package! (May 1996 issue.) I have been using computer algebra (Reduce, Mathematica, Maple, and now Axiom) intensively in my research work for ten years and have written publicly available software in both Reduce and Mathematica. In comparison with the other packages, Reduce is equally effective and state-of-the-art in terms of symbolic maths. It doesn't possess in-built sophisticated graphics and numerical facilities but:

(a) We are talking symbolic mathematics capability here, not graphics or numerics;

(b) One can add on (free!) sub-packages to achieve 90 per cent of what the other packages do (I have used these to do research in probability: they work very well);

(c) Which symbolic maths package one prefers is as much a matter of taste as which language, which editor, which operating system. Reduce has important virtues – it concentrates on symbolic maths rather than being an enormous bloated package which tries to do everything, it has an active enthusiastic and expert user community, it runs on Acorn machines!

I reckon I prefer Reduce for the same reasons that people prefer Acorn machines: I don't mind putting in a little effort if the result is efficient working, I appreciate sound design, and I like systems which emphasise interrelated tools each doing one thing really well.

Thanks for that, as you know I am a physicist not a mathematician so I sought the opinion of the Acorn-using mathematicians at my University. They had evaluated it and found it wanting, so I am glad to here it is in fact a lot better than they thought.

Now sometimes I get problems that are quite puzzling, like the one sent by Mr Morris from Cardiff who writes:

A program I have been using for about a year which prints cassette inlays will now only print one inlay – when I try to get a print from the second one I get the message 'Error from Cassette designer – Can't open printer – internal error code 10340'. I thought something must have altered the program in some way so I deleted it, reset the machine and reinstalled it from the original Acorn disc, but I still get the same thing. Can you please tell me what to do about it?

Well, in the case where something used to work and now no longer does there has to be some change somewhere, but where I can only guess. The words 'internal error code' are recommended by Acorn in preference to the much more useful 'at line'. Therefore, I guess you should look at line 10340 which is probably attempting to open a file.

I suspect the file is not being closed from the first operation so you could try inserting a close instruction in the line before it is opened. The question remains as to why it was working in the first place because something certainly has changed. First of all, look to see if any modules have been unplugged, then look for the modules concerned with printing and reinitialise them.

If you can't figure out which to reinitialise then do them all – it won't do any harm. How about some hacker out there writing a small program to reinitialise all the modules you find on the system, or maybe it's already been done. If anyone knows the definitive answer to this specific problem then please write in. AU

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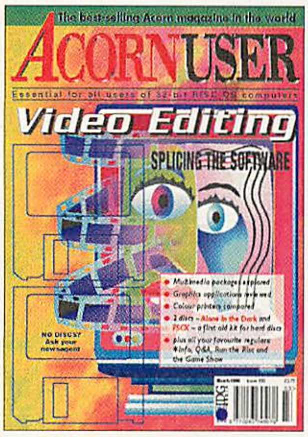
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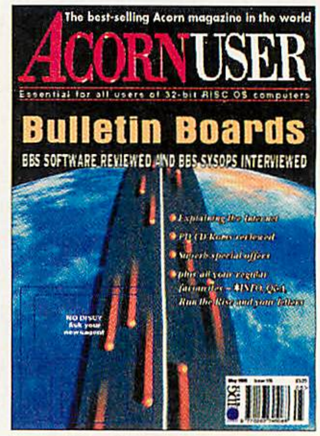
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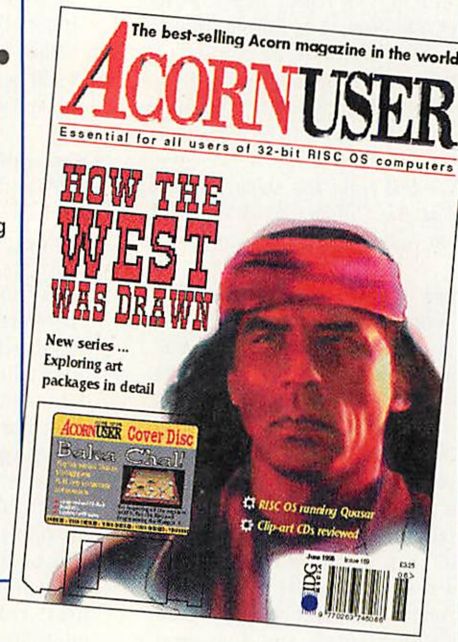
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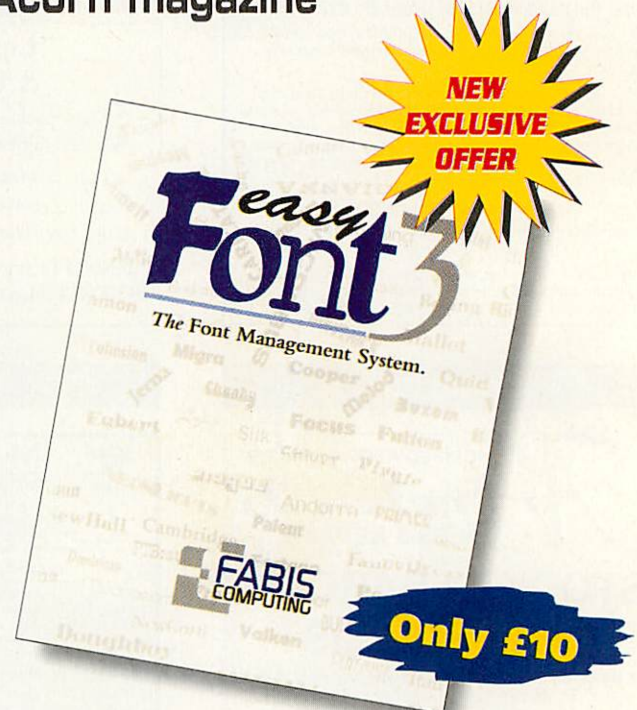
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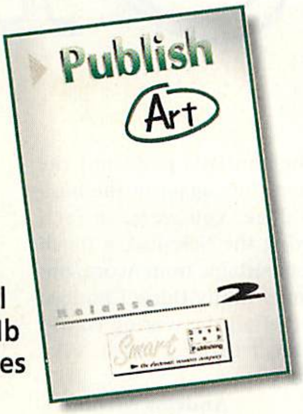
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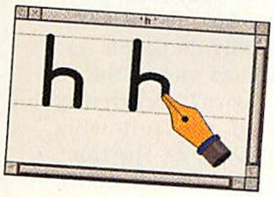
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Letters



What about Xemplar?

This joint venture between Acorn and Apple seems to be a chance for Acorn to use all its expertise in the education market to help sell Apple Macs – or that's how it sounded in the article in the April issue. I got my Clan mailing a few days after I bought the issue of *Acorn User*. The information in there made it sound quite different – that it would in fact port programs for the Mac OS to the Acorn but not the other way around. I wonder why?

A friend at school who adores Macs (can't think why – then again he's plain weird) showed me a copy of his *Mac User* magazine which had a letter entitled 'from little Acorns'. The person was complaining about this joint venture with Acorn, saying that Apple already had an excellent education machine.

Yeah right. If you have a massive lottery grant and a nuclear power station on site maybe. The thing is, it costs around £999 for just the box – no keyboard, monitor, mouse, that's it. And another thing, what weirdo came up with building an OS around a one button mouse — I mean one button?

I also read that Acorn had renamed the Pocket Book 2 the Media Pad. Well done, this now sounds more sophisticated, and if I had a choice between palmtop computers without seeing them I would choose the Media Pad because it sounds much more advanced – then again I'd be pleased with any palmtop computer.

At last Acorn is planning on releasing a portable computer (two in fact). You showed one in the contents page and the same picture again in the business page. You were, in fact, showing the NewsPad, a touch screen portable from Acorn, but the only funny thing I noticed was that all the writing was in Italian, I think – hmm, very weird.

Andrew Nicolaou, Chingford, London

Well there was a bit of confusion over which portable was which — our confusion that is. As for releasing a portable, this is a little awkward:

Acorn Risc Technologies is essentially an R&D business which can generate fast prototypes of different machines and will produce them if they are ordered. It's less likely that they'll produce them for enthusiasts (that's thee and me) on their own – not impossible just less likely. Still, we can hope.

DinOSaurs...

I was interested to see the letter sent by Alan Shooter of New Zealand in the May edition of *Acorn User* stating that the British people should support their products such as Acorn machines.

While that may seem patriotic, one has to ask the question 'Why do people buy other machines such as the PC and not Acorn?' I currently own all of the following machines: ZX81, ZX Spectrum, Sinclair QL and the Acorn A3000. I have seen the rise and demise of Sinclair products which at the time I was biased towards when other people preferred the American products such as the Commodore 64 and the Amiga.

At that time, the other machines had better software and hardware and Sinclair got left behind. Sadly, this has been true of other computer companies as well. The phrase 'Software maketh Hardware' is also true. It is no good having a machine with excellent hardware capabilities if there is no good software to exploit the advanced technology.

The PC has survived to this day in all its variants because it



has had the software support needed to survive when other machines have faltered. Today, when you walk into a computer store (or even WHSmith!), the majority of the computer software and hardware is available for the PC format. Even the big software industry giants produce software for the PCs.

In all of this where, I here you ask, is the same software for the Acorn machines? After all, isn't RISC OS far better than Windows or DOS. Do the Risc PCs not have better graphics capabilities than the other PCs? However, ask any independent computer observer about what machines to buy and he will either advise a PC (Pentium or 586 based), or the more expensive Apple Macintosh. I would be surprised if Acorn products would ever cross his mind.

I was considering purchasing a Risc PC 700 (my A3000 is now limited in the extreme!), but in light of Acorn moving forward together with Apple and its stated interest in the PowerPC platform, I am now hesitant to spend my money in Acorn's direction. It is not a question of supporting British but rather of being prudent as to what technology will benefit me and how long that technology will last as an investment.

It's OK for Acorn to reassure it's large user base of its continued support for RISC OS for the near future, but after that, what then? After all, where is the BBC now after the changeover to the Risc technology. Don't get me wrong, I am a supporter of RISC OS but when the company behind the RISC OS technology suddenly changes over to the Apple camp, what is there left to support?

Change can be hard to accept with its uncertainty but it is sometimes for the better. Evolution has to play her role in life otherwise we would still have the Dinosaurs here today. After all, the PowerPC and MacOS are now most definitely the future...

Gareth Williams
South Wales, UK

Well, as has been mentioned before, Acorn hasn't actually moved into the Mac OS camp. The joint venture of Xemplar is a hiving off of the education section to a more lucrative format – the one-stop shop. However, things are now looking very bright indeed with development of RISC OS assured for at least the next few years. Acorn's deals with large corporations may result in a re-badging of its products, but it's still RISC OS 'under the hood'.

Where's the point?

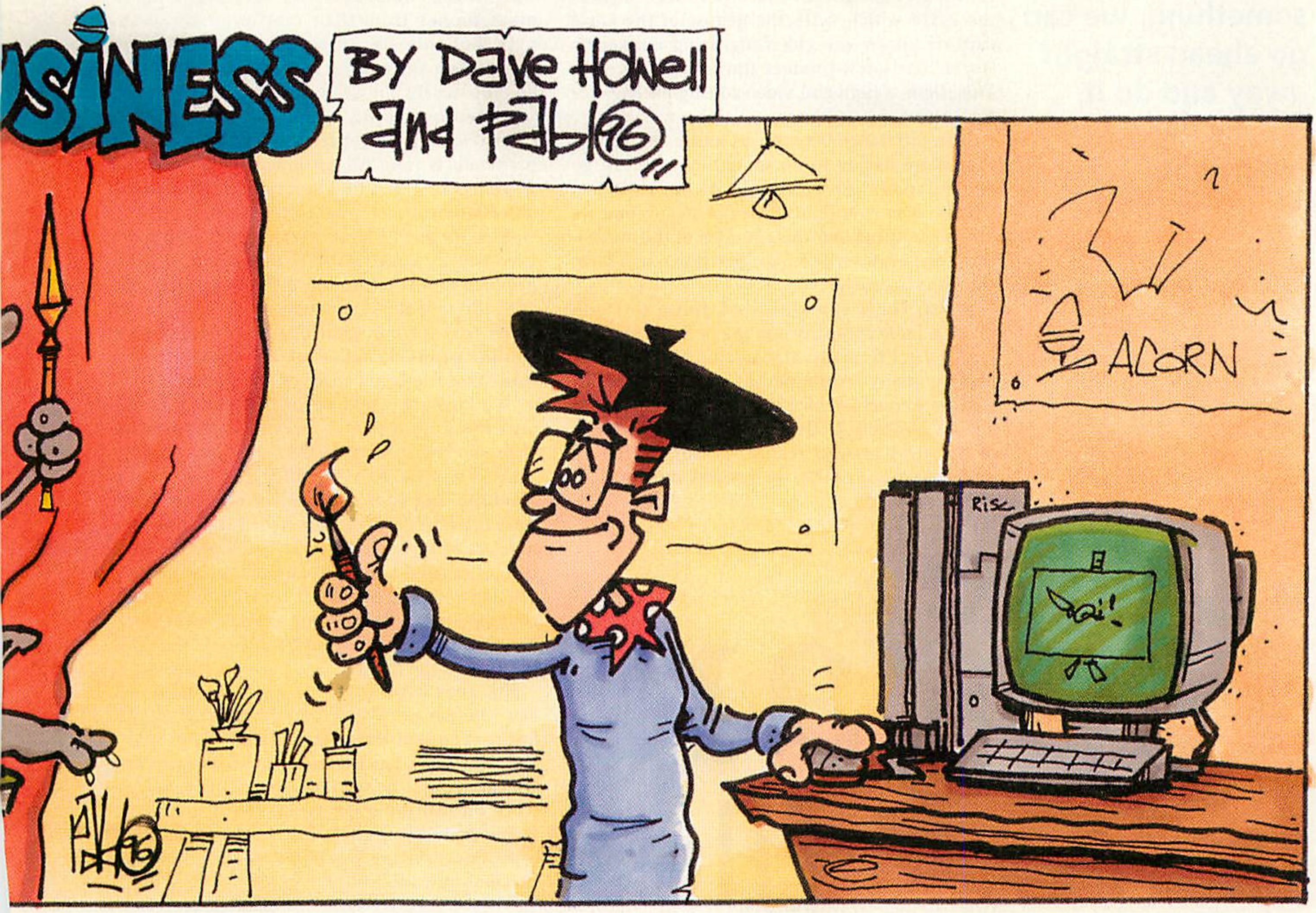
Your correspondent D A Cox, in *Acorn User* Issue 169, June 1996, makes a curious plea for a return to what he considers the correct place for a decimal point.

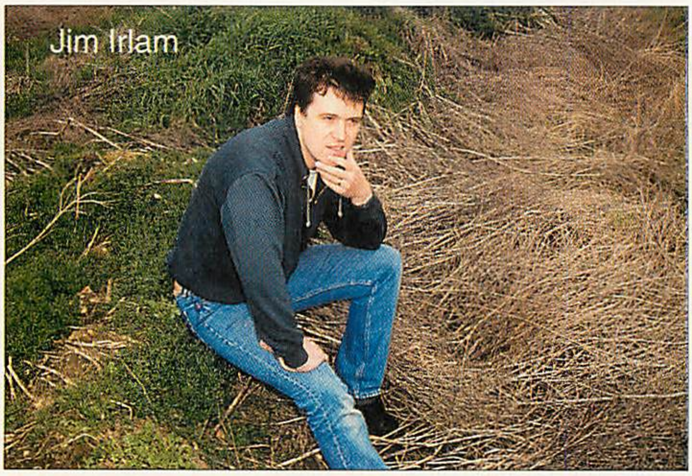
For his information, the correct position of the decimal point has been 'on the line', as is a full stop, for over 25 years. (see e.g. 'Quantities, Units and Symbols' the Royal Society 1975, 'SI units, Signs and Abbreviations' ASE 1970, 1981, the official recommendations of the CGPM or any physics book of the present or previous generation).

In fact, a centre point may be used to denote the multiplication of algebraic quantities, thus a x *b* may be written as *a•b*. Amounts of money may be written with a centre point though it is noticeable that nowadays, financial institutions usually put the point in the line.

This answers the question that was asked by your correspondent.

Keith Bamford,
Pontefract





Jim Irlam

> The difference between us and a big firm is that if we decide to do something, we can go ahead straight away and do it, maybe even overnight.

The Regan files

In today's increasingly materialistic society, where everything is mass-produced, and Microsoft and Intel assault you from every advertising angle, it is heartening to know that you can still get something custom-made for your Acorn computer.

Jim Irlam runs Irlam Instruments, responsible (as long-time readers will remember) for i-Scan, the first scanner on the Archimedes to scan in a grey scale, and once described by *Acorn User* as 'the Rolls Royce of scanners'. Nowadays, Jim's company also designs video products, such as the 24i16 which, with the demise of the Eagle card, is taking the video digitising market by storm. The latest product Jim is working on is *VideoDesk*, a high-end video-editing package for the Acorn.

'The difference between us and a big firm is that if we decide to do something, we can go ahead straight away and do it' Jim explains. 'Maybe even overnight. I am not saying that we drop everything, but there is none of the bureaucracy or politics which slow you down in a large company.'

It was Jim's experience of doing research inside a large company and the politics involved which finally made him decide to set up his own company. While he was working at Thorn EMI he frequently had ideas for instruments to aid his research. It always took ages before any of his ideas became reality, so Jim got fed up and asked his father (a retired mechanical engineer) to make them for him. 'We began making scientific instruments; that's where the company's name came from. Thorn EMI agreed to pay us for it – it turned out to be quite a lucrative business and in fact we still make them. As with all good businesses, it started from – if not quite the kitchen table – a six foot triangle under the stairs, plus a little workshop my father pottered around in. All our instruments were based around the BBC, so it seemed like a natural progression to Acorn Archimedes.'

Soon Irlam Instruments was making instruments for other firms, and it decided to branch out and make general purpose products for Acorn machines.

'The obvious thing was to combine our skills: optics for me and mechanics for my father. We decided to build a scanner – at the time there were only black and white hand scanners – and i-Scan was launched about a year after the Archimedes came out.

'In retrospect, i-Scan had all the styling of a house brick, but all the mechanics and 'stuff' inside were made by hand, by us in-house.' (They are still going strong – one was in for a minor repair when I was visiting.) 'Then we went on to do the first colour scanner for Acorn machines, but it was only a short time before it became uneconomic for us to build everything in-house. Even though we had done the R&D, it was the big companies who were beginning to make money from their mass-produced scanners. But this always happens when you are working on the cutting edge of technology. We do quite nicely but we do not make millions.'

Jim enjoys going to shows because it is a chance for him to get feedback and ideas about his products from his customers. In his quest to do things first, Jim told of a run-up to one show and what he did in order to get there.

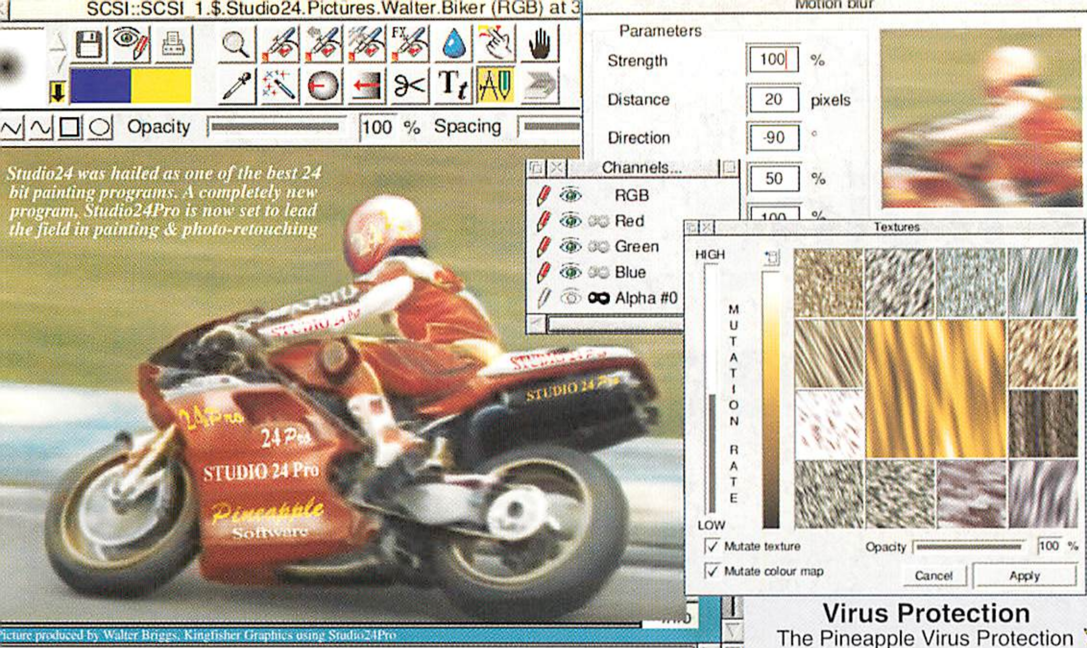
'This is going back a few years. We were involved in a race with a competitor to get a product to an Acorn exhibition. We were not *officially* told this, but someone at Acorn let us know that a competitor of ours was making a similar product. Whoever got their product ready first would get space on the stand.

'We knew it would be really tight to do our own thing from scratch, so we bought a board that worked already – for a PC. We quickly knocked up a PC interface for our Acorn machine and then strapped this rather large card into the back of our Acorn machine. We mocked it up so it had two back panels with connectors and looked like an authentic podule. Then we bolted our A440 together so no one could see inside. We got our product to the show before our competitor and I am sure they did not twig at the time'.

Jim does stress that this was over five years ago – he has never done anything like that ever again – and that *VideoDesk does* exist.

Business for Jim Irlam has never been better. He admits that he is lucky because he is able to work on things he wants; his worst nightmare would be creating cheap and nasty products. In a production-line world, it's a welcome and precious attitude.

Jill Regan AU



Features

- Fast Virtual Memory
- Random mutated texture generation
- Undo brush, Texture and Filter brush
- Over 40 pre-defined filters including Spin blur, Motion blur, Lighting etc, etc.
- PhotoCD and Scanner input
- Merging of Sprites, Jpegs, Tiffs & Draw files.
- Built in Draw file creation
- RGB, CMYK or Indexed channel modes
- Up to 16, 8 bit mask channels
- Filter preview window (shown above left)

'Many Acorn User front covers have been created from scratch using this program alone, concrete proof of the power of this creative tool'. - ***Acorn User March 96***

Studio24Pro

£149.87 inc vat

Removable Harddrive System



Total Data Security & Harddisc Backup

The removable harddrive system fits into a 5¼" drive slot in the RiscPC and harddrives are available in many sizes which can simply plug in and out of the slot as required. The drive may be locked in place to prevent unauthorized removal. For total security the drive may be removed and stored in a safe place to prevent unauthorized access to your data. Because the removable drives are available in any size (up to at least 4Gb) they are also ideal for use as backups for existing harddrives, and may be easily transported between different computers for rapid transfer of large datafiles. The system is available for use with both IDE and SCSI filing systems. External boxes are available to enable SCSI removable drives to be used with older Acorn models. Please 'phone for details. See opposite for prices.

PAL TV Coders



PLC/3 £104.57

The PLC/3 PAL TV Coder works in any of the 'Standard' Modes, e.g. mode12 and 15 on all Acorn computer models. The PLC/3 has a 15 pin RGB output for the monitor, a BNC for video and an S-VHS connector for S-Video. The PLC/3 will work with RiscPC computers although the AKF60, AKF85 and AKF90 will not work at the same time.



AVK/3 £355.00

The AVK/3 will work with all computer models in all screen modes up to 800 x 600 resolution in 16 million colours. It has a remote control with facilities for zooming, freezing & panning the TV picture. Ideal for lectures and demonstrations etc. The AVK/3 includes all connecting cables including a SCART which gives TV frequency RGB O/P for large screen TV's, a phono socket for composite video and an S-VHS socket for S-Video.

ArtWorks Video Tutorial



A Brand new product from Pineapple is this VHS Video Tutorial covering the use of ArtWorks.

Walter Briggs is the tutor for this 1 hour video which shows how to use all the ArtWorks tools and then goes on to show how Walter produced his famous Tiger head picture. Walter also draws an impressive landscape picture which can be copied by those with no artistic talent at all!

ArtWorks Video Tutorial £19.99

24 Bit Colour Scanners



Pineapple can offer a wide range of Flatbed A4 colour scanners starting from as low as £359 including software and VAT!

The Epson range is currently the most popular although Canon are expected to release a new scanner to replace their IX-4015 shortly. The cheapest in the Epson range is the GT5000 with an optical resolution of 300dpi. This is adequate for virtually all home use. The GT5000 is available with either a parallel or a SCSI interface. The GT8500 has an optical resolution of 400dpi and comes with both parallel and SCSI interfaces. Finally, the GT9000 is the top of the range with an optical resolution of 600dpi and both parallel and SCSI interfaces. Imagemaster and Twain software are included in the price, but we also offer our Studio24Pro Photo re-touching software at just £80.00 inc vat with every scanner purchase.

20 : 20 Finance available on all RiscPC's

Studio24Pro at just £49.00 with any RiscPC purchase
Studio24Pro at just £80.00 with any colour scanner
FREE membership of the Virus Protection Scheme with any RiscPC

Virus Protection



The Pineapple Virus Protection Scheme will allow you to detect and remove over 100 viruses from your Acorn computer.

'If you're interested in virus protection, join the Pineapple virus protection scheme and buy Killer. Accept no alternatives.' - ***Acorn User Feb 96***

Multimedia Speakers

Yamaha 10 Watt	YST-M10	£63.00

A4 Colour Scanners

Primax Flatbed A4	£359
Epson GT5000 (parallel)	£425
Epson GT5000 (SCSI)	£499
Epson GT8500	£569
Epson GT9000	£699

All scanners include Imagemaster & Twain. Studio24Pro at just £80.00

A7000 Computers

4Mb	HD425	14" Mon	£1019
4Mb	HD425CD	14" Mon	£1139

RiscPC 600 Computers

4Mb	HD425	14" Mon	£1325
4Mb	HD425CD	14" Mon	£1450
4Mb	HD425	17" Mon	£1699
4Mb	HD425CD	17" Mon	£1825

RiscPC 700 Computers

5Mb	HD425	14" Mon	£1550
5Mb	HD425	17" Mon	£1925
5Mb	HD425CD	14" Mon	£1699
5Mb	HD425CD	17" Mon	£2049
10Mb	HD850	14" Mon	£1949
10Mb	HD850	17" Mon	£2299
10Mb	HD850CD	14" Mon	£2069
10Mb	HD850CD	17" Mon	£2425

PC Cards

	Separately	with RiscPC
SXL-33 Card	£233.83	£116.32
DX2-66 Card	£289.00	£169.00
DX4-100 Card	£349.00	£229.00
586-100 Card	£579.00	£459.00

CDRom Drives

x4 Speed CDRom	£120.00
x6 Speed CDRom	£233.82

Memory Upgrades

'Phone for latest SIMM prices !!'

1Mb to 2Mb Vram	£116.32
2Mb Vram	£233.83
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16Mb SIMM Ram	£249.00
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RiscPC Sound Card	£70.44

All our prices INCLUDE 17.5% vat & delivery!

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Citizen		
PRINT*iva* 600C		£399.00
Hewlett Packard		
Laserjet 5L	4ppm	£458.00
Deskjet 600		£231.00
Deskjet 660	colour	£315.00
Deskjet 850	colour	£415.00
Canon		
BJC600E	colour	£375.00
BJC610	col 720dpi	£415.00
BJC4000	colour	£276.00
BJC4100	col 720dpi	£276.00
BJC200	mono	£205.00
BJC210	(col option)	£222.00
Epson		
Stylus Colour II		£329.00
Stylus Colour IIS		£244.00
Stylus Pro XL (A3)		£1079.00

3.5" Bare Harddrives

540Mb	IDE	£149.00
850Mb	IDE	£169.00
1.0Gb	IDE	£225.75
1.0Gb	SCSI	£235.00
2.0Gb	SCSI	£659.00
4.0Gb	SCSI	£938.00

Removable Harddrives

IDE Mounting Kit		£ 25.00
540Mb	IDE	£168.00
850Mb	IDE	£188.00
1.0Gb	IDE	£244.00
SCSI Mounting Kit		£ 29.00
1.0Gb	SCSI	£255.00
2.0Gb	SCSI	£679.00
4.0Gb	SCSI	£958.00
External Mounting Box		£ 89.00

SCSI Systems

SCSI Card	£116.32
SCSI Internal Cable	£ 9.99
SCSI External Cable	£ 19.99
SCSI II Card	£189.00
SCSI II Internal Cable	£ 9.99
SCSI II External Cable	£ 22.32

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14" 0.28mm DPMS	£179.00
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!! Special RiscPC offer !!

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'Pineapple offer some of the finest and friendliest after-sales support you will find' - Acorn User Mar 96

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Acorn CENTRES OF TECHNOLOGY